Rail Freight Status Report 2013

Rail freight after a decade of EU rail policy

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The Voice of European Railways

CER

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Foreword

More than 10 years ago, ambitious objectives were set for rail freight competitiveness by the European Commission's 2001 Transport White Paper. Numerous policy measures have been introduced over the last decade in an attempt to realise this vision, and a new Transport White Paper was adopted in 2011, with more ambitious objectives for an efficient and sustainable transport sector.

While the European Commission is introducing a new package of measures for rail – the so-called 'Fourth Railway Package' – it is an appropriate time to take stock of both positive and negative developments and to assess the efficiency of measures introduced over the last decade.

So what is the state of the rail freight sector after a decade of EU rail policy measures? Unfortunately, it is not as good as one might hope, and overall progress in the competitiveness of rail freight compared with other modes is rather disappointing. In spite of a significant development in intra-modal competition over the past decade, the much-needed modal shift towards rail, which would bring energy efficiency and important CO_2 emissions gains, is still far from being a reality. The imbalance between road and rail freight is increasing, in a worrying move for the sustainability of the transport system.

The railways have demonstrated their commitment to quality and efficiency by subscribing to various quality charters and quality management systems, and are seeking to improve their processes and products, both as a sector and at company level. These positive developments need to be recognised. However, on their own, they are unlikely to prove sufficient to rejuvenate rail freight.

Building on the lessons from the past decade, we need to collectively look at what needs to be done to turn the objectives of the 2011 Transport White Paper into reality. This report aims to do just this, by providing a snapshot of the situation of rail freight and assessing the efficiency of policy measures already introduced. Most importantly, it provides concrete recommendations in order to fully realise the potential of rail freight.

We hope this report will be helpful in reminding all decision makers that structural measures alone will fail if not accompanied by sufficient funding for rail infrastructure and the introduction of appropriate framework measures to put all modes on a level-playing field. We now have a perfect opportunity to rethink policy objectives and to concentrate efforts on the real issues. The railway sector will continue to play its part, but there is no time to waste.

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Executive summary

Rail freight is a key element in the establishment of a sustainable transport system, as recognised by the European Commission in its 2011 Transport White Paper. The low level of external costs generated by rail freight should make it the mode of choice for freight customers looking to reduce their environmental impact. Indeed, rail is the most eco-friendly land transport mode for freight, with much lower CO_2 emissions and energy consumption per tonne-kilometre than road freight or transport by inland waterways. However, the environmental impact of specific transport solutions still ranks at the bottom of most freight customers' priorities. With the economic crisis, price has become the most important factor for freight customers, followed by quality parameters such as reliability, customer service and information management, frequency of transport, risk of loss and damage, and handling time.

Various policy measures and instruments have been introduced during the last decade, with a view to reinforcing the competitiveness of rail freight. However, data collected shows that the overall impact of these measures has been very limited. Only one of the 2001 Transport White Paper objectives for rail freight has been reached: the objective of greater intra-modal competition, which has been successfully stimulated, leading to an increasing share of national freight markets going to new entrants (25% in EU-25[1] in 2010). However, modal shift towards rail is still far from being a reality, and the situation has worsened during the last decade. Road freight operators are increasing their share of land freight transport year after year, with the overall modal share of rail decreasing (from 18.5% in 2000 to 16.2% in 2010 in EU-27). The situation varies from one country to another, and there are some stronger-performing areas, in particular combined transport, but the overall picture remains grey. Specific segments such as single wagonload are suffering in particular, and risk disappearing altogether in certain parts of Europe.

The economic crisis has had a negative impact on the sector, but this is also true of other modes, such as road freight. A much more worrying indicator is the growing imbalance between rail and road described above. Given the strategic importance of rail freight for Europe, it is important to understand the reasons behind this relative decline. This situation can be explained by several factors, all related to the fact that policy measures introduced during the last decade have not been accompanied by crucial framework conditions, such as appropriate investment in rail infrastructure and measures to put all modes on a level playing field. **Studies show that the quality of rail freight depends to a large extent on the quality and availability of rail infrastructure. Yet, rail suffers from a chronic underinvestment in infrastructure, which has important consequences on punctuality.** This reduces the competitiveness of rail freight vis-à-vis other modes, in spite of the sector's efforts to reinforce its attractiveness. **Measures introduced to create a level playing field between transport modes have also been far too limited in scope and ambition.** Inequalities in infrastructure charges between road and rail are still a reality and seriously hamper the competitiveness of rail freight. Likewise, full internalisation of external costs is far from being a reality: the current system creates distortions in the transport market and forces society as a whole to pay a big share of the price of pollution, congestion, and inefficient use of energy resources.

[1] Cyprus and Malta have no railway network

In spite of this unfavourable context, rail freight quality has been maintained and has even improved in some cases, over the last years. All companies have one or more quality management systems in place, or are planning to have one in the near future, while the percentage of rail freight business covered by quality clauses has risen dramatically since the last *CER Rail Freight Quality Progress Report 2007/2008*. Likewise, punctuality and reliability of rail freight have remained fair over the last five years. These developments are due in large part to the industry's ongoing efforts to enhance rail freight quality and competitiveness, demonstrating that the sector has taken the issue of quality very seriously and has been constantly striving to improve its services. Aside from the various quality charters adopted by the sector, several projects have been launched to help improve specific segments of rail freight, such as combined transport or single wagonload, and to reinforce the competitiveness of the sector, with a move towards paperless consignment notes and longer trains. On top of these sectorial initiatives, various companies have also launched new processes and products aimed at improving their offer and competitiveness. Some of these positive case studies are presented in detail in the report.

However, these positive efforts have not managed, on their own, to turn rail freight around. In spite of numerous individual and sector initiatives to improve the quality and competitiveness of rail freight, the sector still lags behind road freight. **Looking at the past decade, it is clear that positive efforts from the sector alone will not be sufficient. A number of essential framework conditions should be put in place by political decision makers as a matter of urgency, at European and national or regional level.**

The report therefore proposes a set of measures needed to increase the competitiveness of rail freight and to create the modal shift which has become so essential for Europe, in the face of increased road congestion, and climate change. These essential framework conditions are as follows:

- Sufficient investment in infrastructure, to guarantee the availability of a well-connected and well-maintained infrastructure network for rail;
- A framework in which all transport modes can compete on a level-playing field;
- Measures to remove technical and administrative bottlenecks.

Specific measures should also be introduced for single wagonload, and for multi-modal freight. These measures are crucial to realise the potential that a shift to rail could bring to Europe in terms of energy efficiency and environmental savings. Without them, individual and sectorial efforts are unlikely to create the needed modal shift, or a more efficient and sustainable transport system for Europe.

A list of concrete recommendations can be found in Chapter 5 of this report.

Setting the scene

1

This chapter sets the scene for the subsequent status analysis of rail freight's competitiveness. It starts with an overview of the key advantages of rail freight compared with other modes and provides a rationale for supporting rail freight with appropriate policy measures. It continues with an analysis of the factors behind the choice of specific transport modes by freight's customers and of the evolution of transport preferences with the crisis, followed by an overview of rail freight's environmental footprint. A picture of the types of goods transported via rail freight is then provided. The chapter goes on to provide a short recap of EU legislation of relevance to rail freight. It then ends with a section on the impact of rail infrastructure on rail freight's performance.

1.1 Strategic importance of rail freight

The European Commission's 2011 Transport White Paper sets clear objectives in terms of competitiveness, efficiency and sustainability of the transport sector. It provides a clear blueprint for reducing the transport's system dependence on oil and its environmental footprint, while insuring that it keeps underpinning Europe's economic progress and competitiveness. It particularly sets ambitious objectives with regard to greenhouse gas emissions, with a foreseen reduction of at least 20% of emissions from the transport sector by 2030 and 60% by 2050 compared to 1990 levels. Road congestion is also identified as an increasing problem, which can best be solved by increasing the use of multi-modal solutions.

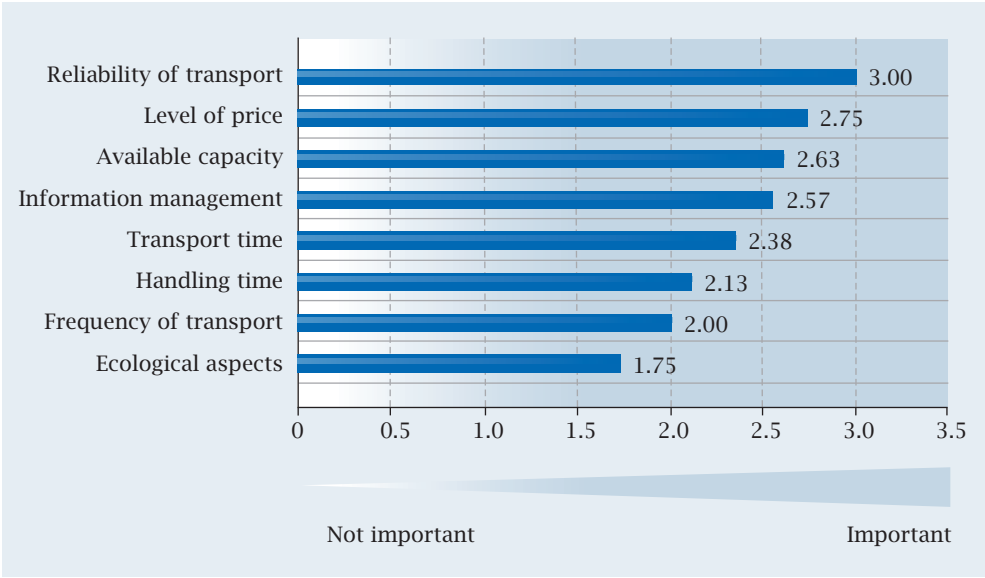
Rail certainly has an important role to play in this respect, as the backbone of the sustainable transport system. The majority of exports and imports in Europe are towards other EU-27 countries, and trade flows with Russia and Asia are also very important for the EU[2]. Rail is well placed to provide efficient links between EU-27 countries and between the EU, Russia and Asia.

These long-term objectives of sustainability and reduction of emissions are crucial societal objectives. Nonetheless, they are not the most important criteria for the choice of transport solutions for freight customers, as will be shown in section 1.2 on freight customers' priorities. Support through specific policy measures and incentives are therefore needed to initiate a change in the right direction and the modal shift called for in the 2011 White Paper. Specific support should be provided to services which rely on high demand to be profitable, such as the single wagonload offer, which allows rail to provide a comparable offer to road transport, with more flexibility and lower volumes than block trains.

[2] European Commission, *EU transport in figures: statistical pocketbook 2012*

1.2 What do freight customers want?

Figure 1 Freight customer priorities



Source: PWC, 2005

In most studies on transport choices, reliability and cost are the two most important factors. Studies conducted before the 2008 economic crisis identified reliability as the most important element affecting the decision-making process of shippers and freight forwarders, slightly before the level of price, as can be shown from the graph displayed above.

After the crisis, price has become the most important criteria, even though quality parameters remain important decision-making factors, as demonstrated by the results of a Rail Freight customers' survey conducted by Booz & Company in 2009[3]. While on-time delivery was found to be the most important selection criteria for customers choosing a rail freight operator in 2008, the 2009 survey identified price competitiveness as the most important factor (with a 78% rating, compared to a 55% rating in the 2008 survey). This was one of the main reasons explaining the sharp decrease in rail freight customers' satisfaction between 2008 and 2009: while hauliers had been able to pass on lower fuel prices directly to their customers, track user charges and energy prices for goods moved by rail had increased compared to 2008, making rail freight less competitive at price level.

The ranking of other important selection parameters vary from one region to another and one study to another, with customer service and information management, frequency of transport, risk of loss and damage, or transport and handling time ranking reasonably high in most surveys[4]. However, one parameter generally comes last: environmental impact and ecological aspects of freight[5].

[3] Booz & Company, *European Rail Freight Survey 2009*

[4] Examples of customers' surveys, such as the EU-funded Moses project or the EU-funded LOGIQ project can be found in the chapters *Players* and *Green Transport* of the *EIA Intermodal Yearbook 2011-2012*

[5] This is the case in the PWC graph presented above, and was also confirmed by the EU-funded Moses project

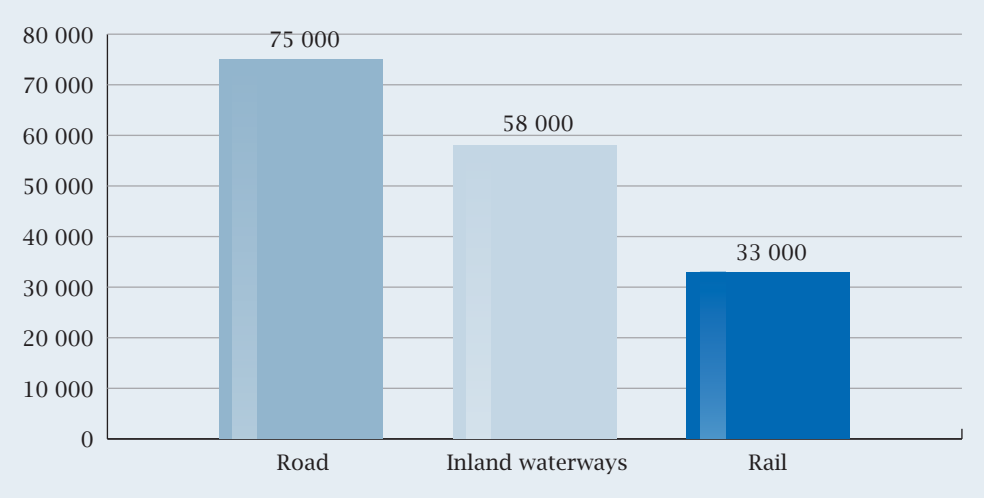
1.3 Environmental footprint of rail freight services

The environmental footprint of specific transport services is an important parameter of freight quality, albeit a neglected one according to most surveys on customers' transport priorities. It is an essential parameter for the sustainability of the transport sector, as emphasized by the European Commission in its 2011 Transport White Paper.

1.3.1 Rail freight environmental performance

Rail transport generates the lowest specific CO_2 emissions and is the most energy-efficient mode compared with road, air and even waterborne transport. Figures 2 and 3 present the primary energy consumption and total CO_2 production during the transport of 100 tonnes of freight[6] from Basel to the Port of Rotterdam, in November 2012.

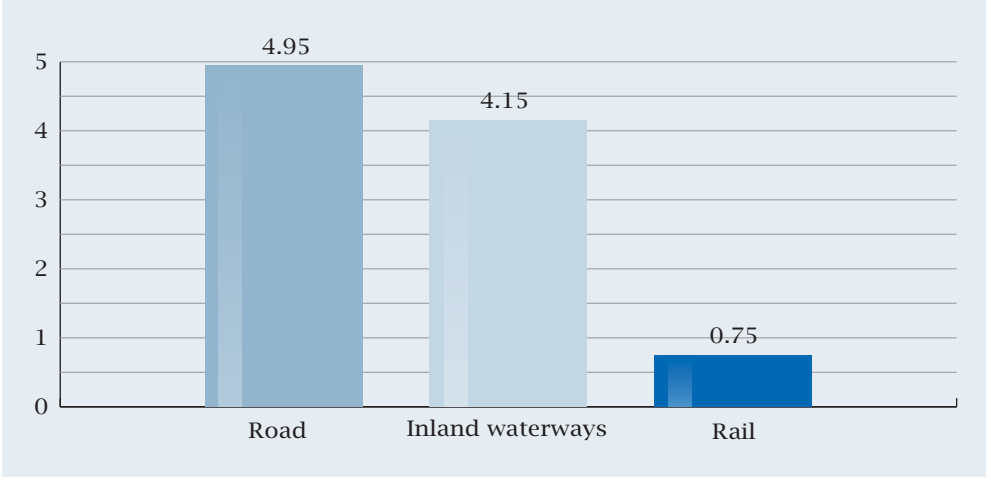
Figure 2 Transport of 100 tonnes of freight, Basel to Port of Rotterdam – Energy consumption comparison (megajoules)



Source: Ecological Transport Information Tool (EcoTransIT) 2012

[6] In order to allow customers to easily identify the cleanest transport solutions, an IT tool called EcoTransIT makes it possible to compare energy consumption, CO_2 emissions and pollutant emissions depending on the chosen mode of transport (air, rail, road or inland waterway). Comparisons can be made for a given itinerary in Europe, and combination of different transport modes are also offered as an option. More information available at www.ecotransit.org

Figure 3 Transport of 100 tonnes of freight, Basel to Port of Rotterdam – CO_2 emissions comparison (tonnes)



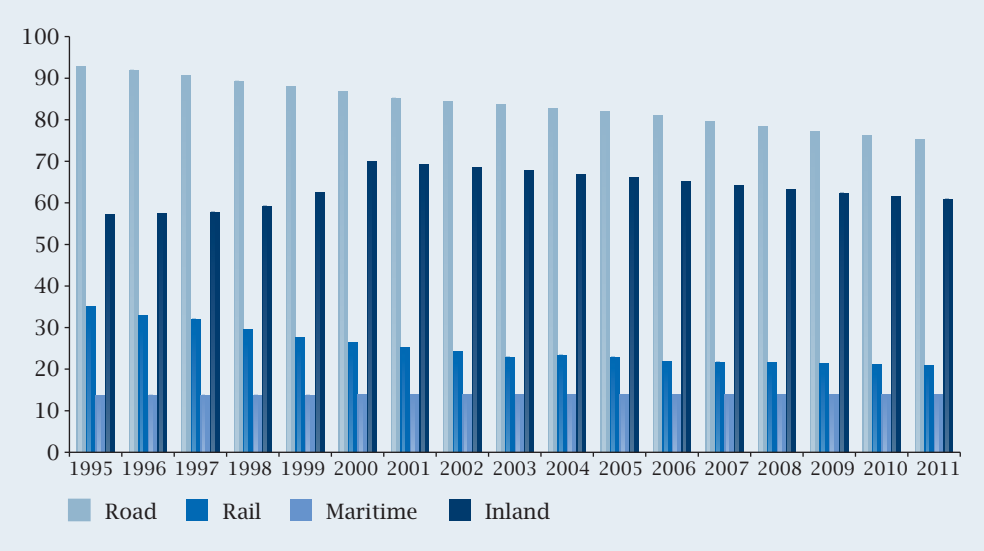
Source: Ecological Transport Information Tool (EcoTransIT), 2012

Specific CO_2 emissions[7] of rail freight transport have decreased by about 40% from 1995 to 2011, as a result of technological improvements, increased load factors and operational efficiency[8]. While specific CO_2 emissions of road freight per tkm have also decreased over this period (by about 19%), its total CO_2 emissions have risen, and road freight remains by far the biggest producer of CO_2 emissions amongst freight transport modes, as demonstrated by Figures 3 and 4, followed by inland waterways. The energy efficiency of maritime shipping has only recorded slight changes of the order of 2% in the time period considered.

[7] The CO_2 emission factors for electricity production represent the emissions incurred during the whole production and supply process from fuel extraction to electricity transport to the sub-stations feeding the railway network.

[8] EEA, 2013

Figure 4 Specific CO_2 emissions (grammes/tkm) per mode of transport in Europe, 1995-2011

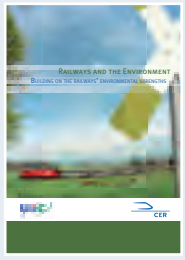


Source: EEA, 2011

The European Commission recognised in its 2011 Transport White Paper that more resource-efficient vehicles and cleaner fuels are unlikely to achieve on their own the cuts in emissions which would be necessary to meet the EU's target on a low carbon economy. A modal shift in favour of transport modes with a low environmental footprint, such as rail freight, would greatly help in reaching these targets.

Railways and the environment: building on the railways' environmental strengths

As one of the most efficient and environmentally friendly ways to move people and goods, this publication from 2009 outlines the tremendous potential of railways to reduce the environmental impact of transport and improve the quality of life of EU citizens. This publications is available at www.cer.be



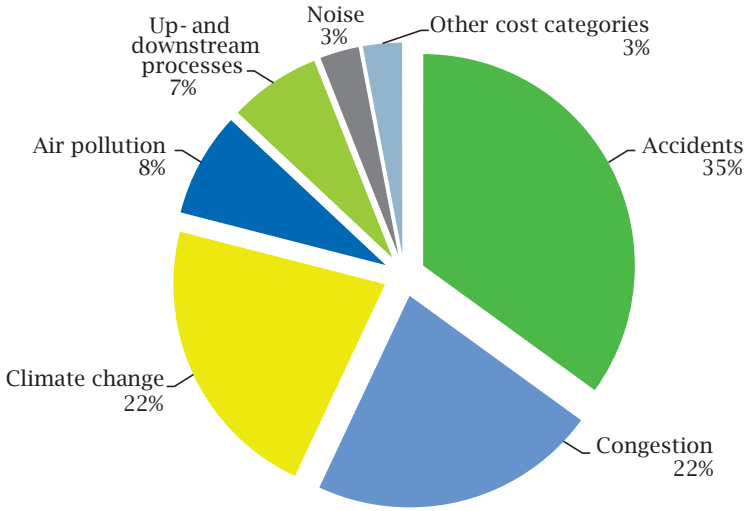
Good practice examples of companies that recognise the advantages of favouring environmentally-friendly transport modes over more polluting ones have emerged[9]. However, the environmental impact of specific transport solutions still ranks at the bottom of overall freight customers' priorities, while the cost of transport has become the most important parameter (cf. section 1.2). Measures that would fully integrate the costs associated with the environmental footprint of transport modes, which are mainly borne by society, within their prices are the fairest and most effective way of increasing the attractiveness of modes with a low environmental impact. Section 1.3.2 will further develop the case for full internalisation of external costs.

[9] For instance, in 2008, French chain Monoprix announced a two-year plan to shift its Paris freight from road to rail: for further information: UIC/CER, *Railways and the environement: building on the railways' environmental strengths*, 2009

1.3.2 External costs: assessing the true cost of transport

Transport activities give rise to environmental impacts, accidents and congestion, the costs of which are generally not borne by transport users, but by society. A study[10] conducted by CE DELFT in 2011 estimated the total external costs for EU-27, for 2008, at €510 billion, excluding congestion. With congestion, the costs amount to €660-760 billion, depending on whether low or high congestion values are used.

Figure 5 Total external costs of transport by externality, EU-27, 2008



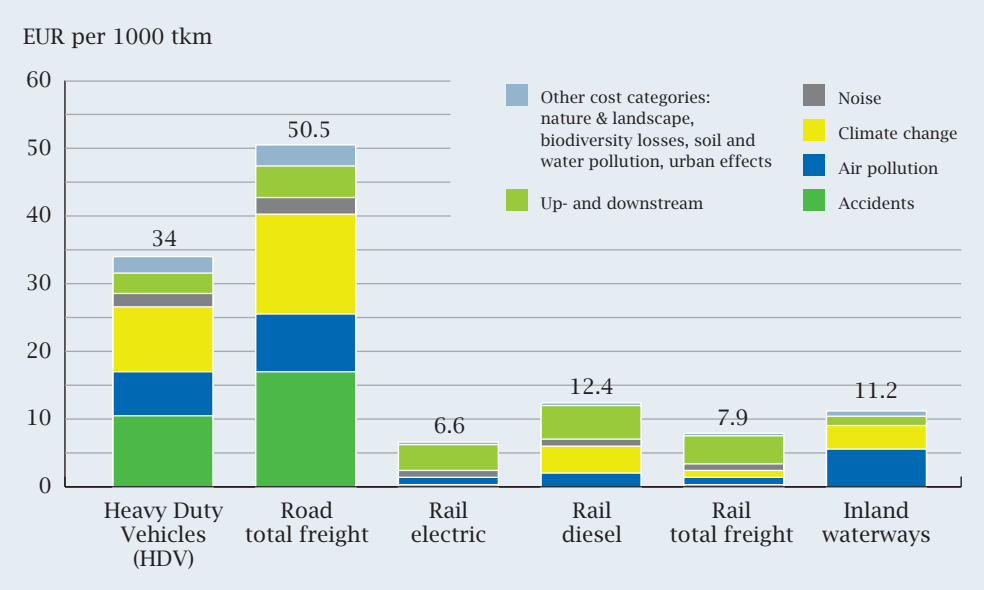
Source: CE Delft, INFRAS, Fraunhofer ISI, *External costs of transport in Europe: update study 2008*, 2011

The total external costs represent 4% of the total GDP of the 27 countries considered in the study, excluding congestion. Congestion costs would bring the total to between 5% and 6% of GDP. Typically, such costs are created by transport users but not paid by them.

Total costs divided by traffic volumes indicate the average costs for each transport mode, thus allowing intermodal comparisons. Figure 6 provides a snapshot of average external costs for each freight transport mode, excluding the costs generated by congestion. Road freight is the biggest generator of these 'external costs', while rail freight is the lowest. Average external costs for road transport are more than four times higher than rail for freight.

[10] CE Delft, INFRAS, Fraunhofer ISI, *External costs of transport in Europe: update study 2008*, 2011

Figure 6 Average external costs for freight transport, 27 European countries[11], 2008 (excluding congestion)[12]



Source: CER & UIC, *Greening transport: reduce external costs*, April 2012

1.3.3 CER/UIC strategy *Moving towards sustainable mobility*

The European rail sector has an environmental record to be proud of and continue to play a significant role in reducing the environmental impact of transport. For instance, total CO_2 emissions from the railway sector in 2007 were 38% less than in 1990. However, the railways recognise that they have to continue to improve in order to play a significant role in meeting future transport needs.

In December 2010, the European railway sector formally adopted a strategy for 2030 and beyond, *Moving towards Sustainable Mobility* that concentrates on what the rail sector itself can do to improve its environmental strengths. It was developed jointly by CER and UIC to provide a medium and long-term plan for the rail sector that fits in with wider environmental and political policy objectives. The following targets were adopted:

- **On climate protection:** by 2030, the railways will reduce their specific average CO_2 emissions (i.e. emissions per passenger-km or tonne-km) from train operations by 50% compared to 1990. They will also not exceed the total amount of CO_2 emissions compared to 1990, even taking into account projected growth in rail traffic. By 2050, the railways will aim for completely carbon-free train operation.
- **On energy efficiency:** by 2030, the railways will reduce their specific energy consumption from train operations by 30% compared to 1990, while by 2050 they aim for this to have reached 50%.

[11] EU-27, minus Cyprus and Malta, which do not have a railway system, plus Switzerland and Norway

[12] Light Duty Vehicles (LDV) are not presented on this chart. These modes are less in competition for long distance traffic.

- **On exhaust emissions:** by 2030, the railways will reduce their total emissions of NOx[13] and PM10[14] by 40% in absolute terms compared to 2005, while by 2050 they will aim to have zero emissions of NOx and PM10 from trains.
- **On noise:** the railways aim that by 2050, noise and vibrations will no longer be considered a problem for the railways, with noise levels that are socially and economically acceptable and allow for 24-hour passenger and goods operations.

The CER/UIC summary brochure as well as a longer version of the strategy *Moving towards sustainable mobility* are available at www.cer.be

In order to monitor the progress towards these targets, UIC and CER have established an Environmental Target Monitoring System to measure improvements. A report monitoring progress towards these targets is also produced annually.

By establishing its own voluntary strategy, the rail sector is demonstrating that it is a responsible and forward thinking low-carbon mode of transport, whose role should be enhanced as part of the wider move to decarbonise transport. Through the creation of this strategy, the railways are showing the path towards an even cleaner, greener rail sector for 2030 and beyond.

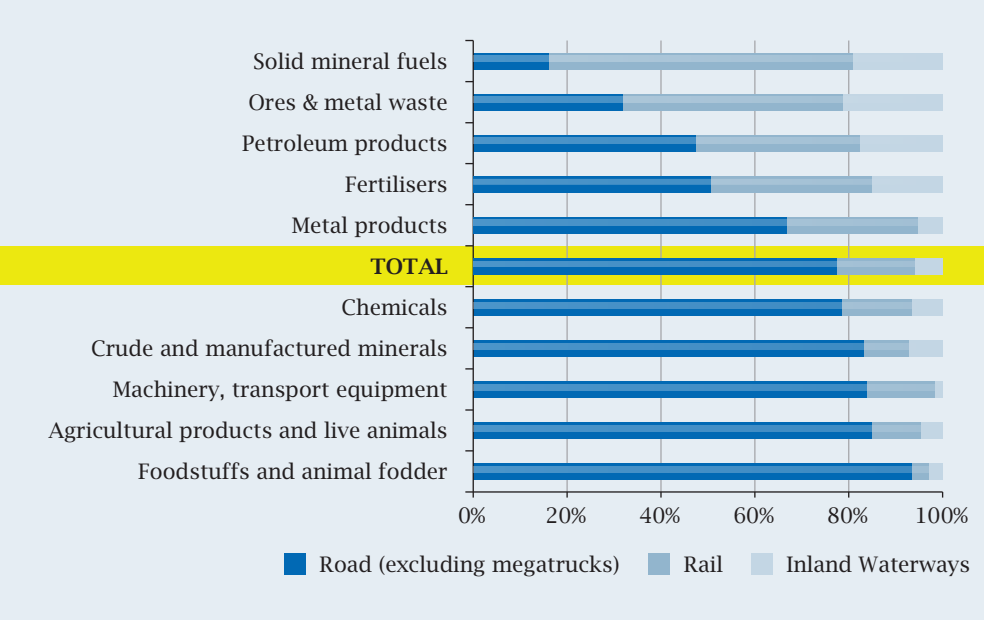
[13] Nitrogen oxides produced during combustion, which can eventually form nitric acid, which contributes to acid rain

[14] Particulate matter smaller than about 10 micrometers, which can settle in the bronchi and lungs and cause health problems

1.4 Which goods are transported by rail freight?

Customers' preferences also vary according to the type of goods being transported. Figure 7 provides a snapshot of modal share per product categories from 2006[15]. Looking at the performance of the various inland freight modes, rail is the mode of choice for bulk commodities such as solid mineral fuels (coal, coke), ores and metal waste, and an important mode for the transport of petroleum products and fertilisers.

Figure 7 Performance of inland freight modes in percentage of billion tkm by category of product[16], EU-25, 2006



Source: Eurostat (Transport), 2006

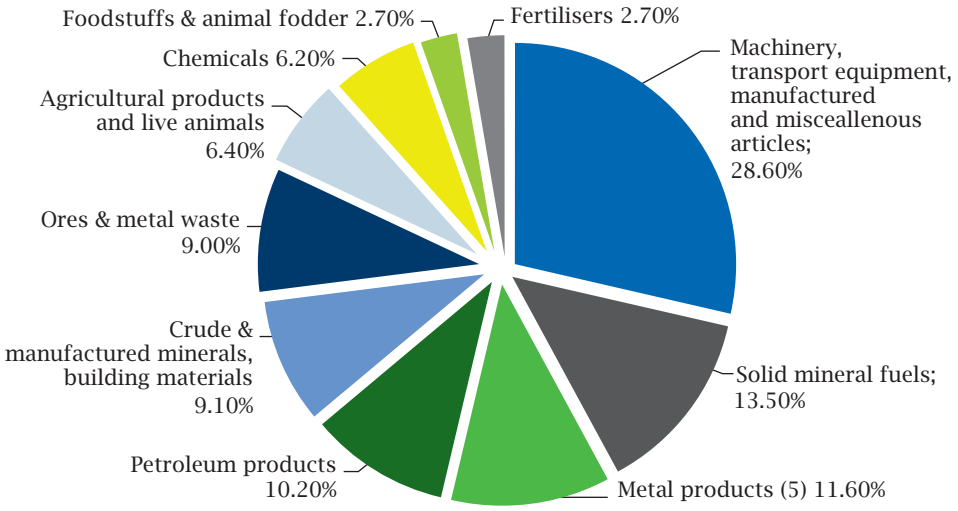
However, for the majority of goods categories, road freight remains the preferred mode of transport, particularly for foodstuffs and animal fodder (such as beverages, perishable foodstuffs, sugars and spices), crude and manufactured minerals and building materials (such as cement, sand, gravel, stone and plasters), and agricultural products and live animals.

If we look at goods carried by rail (see Figure 8), the largest category by far is 'machinery, transport equipment, manufactured and miscellaneous articles' (such as tractors, engines, glass and ceramic products, leather, textiles and clothing, and other manufactured articles), which represented 28.6% of goods carried by rail in 2006 in the EU-25.

[15] More recent data from Eurostat are unfortunately not available. It is worth noting that such data have become commercially sensitive with the opening of the market to competition in 2007.

[16] NST/R or Standard goods classification for transport statistics, where types of goods are classified by chapters

Figure 8 Categories of goods transported by rail freight (% of total tkm), EU-25, 2006



Source: Eurostat (Transport), 2006

1.5 European legal framework for rail freight

Various legislative measures and instruments have been introduced during the last ten years, with a view to reinforcing the competitiveness of rail freight.

1.5.1 Railway Packages

The most important legislative measures for rail freight adopted by the EU during the last decade formed part of so-called 'Railway Packages'.

The **First Railway Package**, adopted in February 2001, consisted of three directives:

- Directive 2001/12 amending Directive 91/440 on the development of the Community's railways;
- Directive 2001/13 amending Directive 95/18 on the licensing of railway undertakings;
- Directive 2001/14 on the allocation of railway infrastructure capacity and the levying of charges for the use of railway infrastructure and safety certification.

The main provisions introduced by the First Railway Package were as follows:

- Open access to all European railway undertakings for international freight services (initially limited to the TERFN[17]);
- Further clarification of the formal relationship between member states and infrastructure managers, and between infrastructure managers and railway undertakings;
- Definition of the conditions that companies must meet in order to be granted a license to operate freight services over the European rail network and of provisions regulating the granting of licenses;
- Increased transparency of the processes governing access charging and capacity allocation;
- Setting of requirements for safety certification of railway undertakings.

The **Second Railway Package**, adopted in April 2004, consisted of the following legal texts:

- Directive 2004/51 amending Directive 91/440 on the development of the Community's railways;
- Directive 2004/49 on safety of the Community's railways;
- Directive 2004/50 amending Directives 96/48 & 2001/16 on interoperability;
- Regulation 881/2004 establishing a European Railway Agency.

It introduced the following provisions:

- Open access to all European railway undertakings for all rail freight services (international as of 2006, and national as of 2007);
- Mechanism for harmonising safety standards and requirements;
- Provisions related to safety certificates (content of certificates, introduction of safety authorisation for infrastructure managers and procedural requirements for safety authorities);
- Provisions related to the enforcement of safety rules and the investigation of incidents.

[17] Trans-European Rail Freight Network: consisted of around 50.000 route-km, over which 70% to 80% of all rail freight traffic was carried in 2001.

The **Third Railway Package**, which did not touch upon freight issues, was adopted in 2007.

The **Recast of the First Railway Package** was completed in 2012, with the aim of adjusting existing legislation. Member states will need to transpose the new rules in their legal systems by early 2015.

The Recast introduced the following provisions:

- Additional provisions to ensure the independence of rail regulators and measures to reinforce the organisational capacity of rail regulators in terms of material and human resources;
- Establishment of a formal network for rail regulators to ensure co-ordination and exchange of best practices;
- Reinforced obligations for member states to ensure the balance of infrastructure managers' accounts over a maximum period of 5 years and to provide them with public funding under multiannual contracts;
- New mandatory system of modulation of infrastructure charges;
- Measures to increase transparency of accounts between railway undertakings and infrastructure managers and to insure equality between operators in terms of market access conditions.

1.5.2 Regulation EC 913/2010 on a European rail network for competitive freight

Regulation EC 913/2010 concerning a European rail network for competitive freight entered into force on 9 November 2010. It was elaborated for the purpose of increasing international rail freight's attractiveness and efficiency and had the objective of improving the conditions for international rail freight by reinforcing cooperation at all levels along selected rail freight corridors[18].

The Regulation requested the setup of international market-orientated rail freight corridors, with a view to:

- Strengthening cooperation between rail infrastructure managers as regards both investments and the management of capacities and traffic;
- Guaranteeing to freight trains appropriate treatment in terms of allocation on lines that cater also to passengers trains;
- Allowing the development of multimodality, in particular with ports.

1.5.3 Interoperability: status and industry progress

Directive 2001/16/EC on the interoperability of the conventional rail system introduced Community procedures for the preparation and adoption of Technical Specifications for Interoperability (TSIs) and common rules for assessing conformity to these specifications. These rules aimed to integrate and harmonise the technical standards applying to conventional rail systems to enable people and goods to move around more easily. The first set of TSIs was adopted in 2002 for the trans-European high-speed rail system. Since then, TSIs have been adopted in a wide number of areas, from infrastructure to control and signaling, freight wagons, telematics applications and noise deriving from rolling stock, to name but a few.

[18] See section 5.1.1 for further details about the rail freight corridors

INF TSI

Commission Decision 2011/275/EU, amended by Decision 2012/464/EU, defines the technical specification for interoperability (TSIs) relating to the **infrastructure sub-system of the trans-European conventional rail system**. This TSI is applicable to all new, upgraded or renewed infrastructure of the trans-European conventional rail system. It lays out essential requirements related to the line layout, track parameters, switches and crossings, track resistance to applied loads, structure resistance to traffic loads, track geometrical quality and limits on isolation defects, platforms, health, safety and environment, provision for operation, and fixed installations for servicing trains. Examples of parameters defined as part of this TSI include the structure gauge, the distance between track centres, rail inclination or tracks' resistance. The aim of this TSI is to facilitate interoperability of the conventional rail system across Europe, hence the traffic of trains throughout Europe.

At the current stage the TSIs for conventional rail and high-speed rail are merged and the content is under revision. A new TSI INF with an extended scope will be adopted towards mid-2013, with foreseen implementation in mid-2014.

WAG TSI

Commission Decision 2006/861/EC, amended by Decision 2009/107/EC and Decision 2012/464/EU, defines the technical specification for interoperability (TSIs) applicable to **freight wagons**. These requirements apply to new, upgraded or renewed freight wagons placed in service after entering into force of the TSIs. The TSIs apply to the structure of the vehicles, braking equipment, coupling and running gear (bogies, axles etc.) suspension, doors and communication systems for freight wagons. Requirements are defined in order to facilitate technical compatibility of freight wagons throughout the EU, and to ensure that health, safety and environmental criteria are met. Such specifications include brake characteristics and performance, strength of vehicles, vehicle track interaction and gauging, or system protection, to name but a few. The aim of this TSI is to facilitate the use of rail freight throughout Europe by facilitating interoperability of freight wagons across Europe. This is particularly useful for freight, given that most freight wagons are privately owned by freight's customers, rather than operators.

A revision of the TSIs applicable to freight wagons will take place in 2013.

TAF TSI

Commission Regulation 62/2006 concerning the technical specifications for interoperability relating to the **telematic applications for freight subsystem of the trans-European conventional rail system** (TAF TSI) was adopted in December 2005. It was amended by Commission Regulation (EU) No 328/2012 of 17 April 2012. The TAF TSI sets the functional and technical standards for exchanging harmonised information between infrastructure managers, railway undertakings and other stakeholders.

The TEN-T funded Strategic European Deployment Plan for the implementation of TAF TSI (TAF SEDP) was developed by the rail sector in 2006-2007. To reflect the subsequent divergence from the SEDP planning, a new plan had to be adopted.

A new Masterplan was delivered to the Commission and the European Rail Agency on 13 May 2012. This document shows that the great majority (in terms of market share) of the European rail freight industry has presented individual plans addressing the TAF-TSI roll-out. The target date for functional implementation, without the Train Identifiers (TID), is established during 2018.

The Common Components defined in TAF TSI have been designed, built and tested by a sector group of 50 companies. This Common Component Group is now able to serve the sector with a common interface and a central reference file database as fulfillment of the TAF TSI regulation.

CCS TSI - ERTMS

Commission Decisions 2006/679/EC and 2006/860/EC on the technical specification for interoperability relating to the **control-command and signalling subsystems of the trans-European rail system** were adopted in 2006. They were amended in 2012 by Decision 2012/88/EU and Directive 2012/969/EU. CCS TSI provides the specifications for ERTMS.

ERTMS, the European Rail Traffic Management System, is a major industrial project being implemented in Europe, with a view to making rail transport safer and more competitive. One component of ERTMS, the European Train Control System (ETCS), guarantees a common standard that enables trains to cross national borders and enhances safety.

Following an intense ten year phase of research and development, validation of the ETCS standard was carried out from 2000 to 2007 with real scale projects underway in parallel. Since 2005, feedback from projects prompted the need to fine-tune the specifications in order to move from local to global compatibility and to ensure interoperability between all projects in Europe. The specification, as modified by a Commission Decision on 23 April 2008, now guarantees that Europe's trains equipped with ETCS can travel on any line equipped with ETCS. On 22 July 2009, the Commission adopted a European Deployment Plan for ERTMS which provides for the progressive deployment of ERTMS along the main European rail routes, with the aim of reducing running costs and improving the system's efficiency on long cross-border distances.

In 2005, the European Commission and the rail industry (manufacturers, infrastructure managers and undertakings) signed a memorandum of understanding (MoU) on the deployment of ERTMS on a key part of the European network with an emphasis on six freight corridors. Under the auspices of the European Coordinator for ERTMS, Karel Vinck, a second MoU signed in July 2008 included new partners and set ambitious objectives for the deployment of ETCS across key freight corridors and high-speed lines which will greatly improve the competitiveness of European railways.

Interoperability is essential to facilitate the development of cross-border freight. Nonetheless, the take-up of new ERTMS standards represents a cost for the sector on the short-term, even if gains are to be expected on the longer term.

1.5.4 EU legislation on railway noise

Noise emission is legislated at European level, while noise reception is submitted to subsidiary principles and legislated at national level. Under the Environmental Noise Directive, the European Commission seeks to get an overview of the existing noise situation (noise mapping) as well as the possible noise reduction within its member states (action planning). The Commission is currently considering a revision of this directive.

European legislation on railways and noise is usually addressed in interoperability directives and further specified in TSIs (Technical Specifications for Interoperability) under the responsibility of the European Commission's Directorate-General for Mobility and Transport, or specific directives, such as the Environmental Noise Directive under the responsibility of the European Commission's Directorate-General for Environment.

NOI TSI

In the Technical Specifications for Interoperability (TSI), the EU enacts noise emission limits for railway vehicles, both for **new rolling stock as well as for renewed or upgraded rolling stock**. Different values are defined for the various types of rolling stock (i.e. freight wagons, locomotives, multiple units, coaches) as well as for different operating situations (i.e. pass-by, stationary, starting and interior noise). For conventional railways the limit values for pass-by noise first came into force in June 2006. This TSI included noise emission limits for wagons with retrofitted braking systems.

Decision 2011/229/EU, amended by Decision 2012/464/EU, currently defines the technical specification for interoperability relating to the sub-system 'rolling stock noise'. The requirements cover noise emitted by freight wagons, locomotives, multiple units and coaches. It sets limits for stationary noise, starting noise, pass-by noise and interior noise for driver's cabs caused by conventional rolling stock.

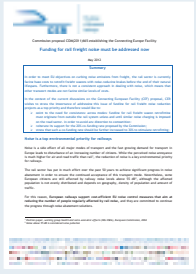
Steps towards existing wagon retrofitting by LL-blocks

In order to meet the requirements set in the NOI TSI, railways have invested in new blocks that will reduce the level of noise at the source. The composite brake blocks have the potential to reduce perceived noise by half, which is particularly beneficial for people living in the areas frequently transited by cargo trains. There are two main types of composite brake blocks: K-blocks, fully homologated and used for years on new wagons, and the new LL-blocks. LL-blocks are compatible with commonly used cast-iron brake blocks and can therefore be implemented on existing freight wagon fleets at reduced cost compared with K-blocks, given that technical modifications to the freight wagons will not be needed.

While these measures will help improve rail freight's quality on the longer term, and are therefore positive for the sector, they come at a very high cost, which cannot realistically be solely covered by the own funds of railway undertakings. Complementary funding from public sources, such as co-funding from the Commission and national authorities, to retrofit freight wagons with noise-reducing brakes before the end of their natural lifespans, is therefore essential, and this issue should be duly taken into consideration within the next TEN-T/CEF financial framework for the period 2014-2020.

Several member states are also studying or implementing different means of incentivizing retrofitting. The Netherlands have introduced noise differentiated track access charges. Germany will introduce a measure to co-fund 50% of the cost of retrofitting later in 2013 through differentiated track access charges. Switzerland directly subsidies the retrofitting of the freight fleet in addition to a bonus paid to low noise trains.

CER has produced a factsheet on rail freight noise, which can be found at www.cer.be.


Commission proposal COM(2011)665 establishing the Connecting Europe Facility

Funding for rail freight noise must be addressed now

May 2012

Summary

Noise is a key environmental priority for railways

1.6 Infrastructure: its effects on rail freight quality and competitiveness

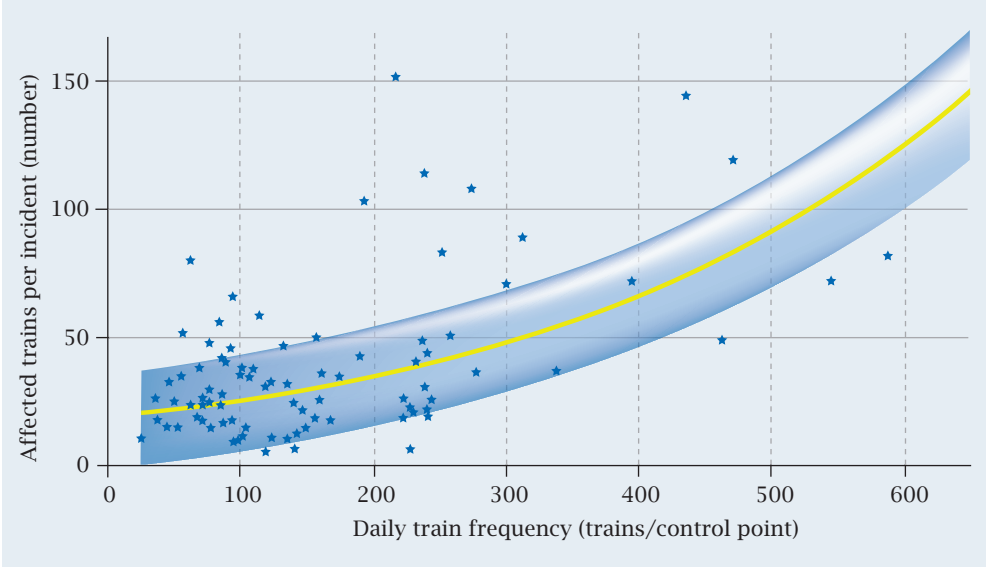
Other parameters than legislative initiatives and interoperability measures have had an impact on rail freight's competitiveness and quality. A key parameter in this respect has been, and continues to be, the quality and availability of rail infrastructure.

1.6.1 Impact of infrastructure quality and availability on rail freight

A strategic research study on the *Drivers and Challenges for Rail Freight Quality in the European Market*, carried out by BSL Management Consultants in 2007 looked at the matter of rail freight quality and the causes for insufficient quality in closer detail. Based on empirical analyses across a sample of European railways this study revealed the mechanisms, drivers and resulting challenges for railway networks in general and for freight quality in particular.

The study identified infrastructure related problems as one of the major causes of delays. It provided a breakdown of all monitored delays occurring in a railway system and showed that up to 50% of delays are caused by issues with infrastructure.

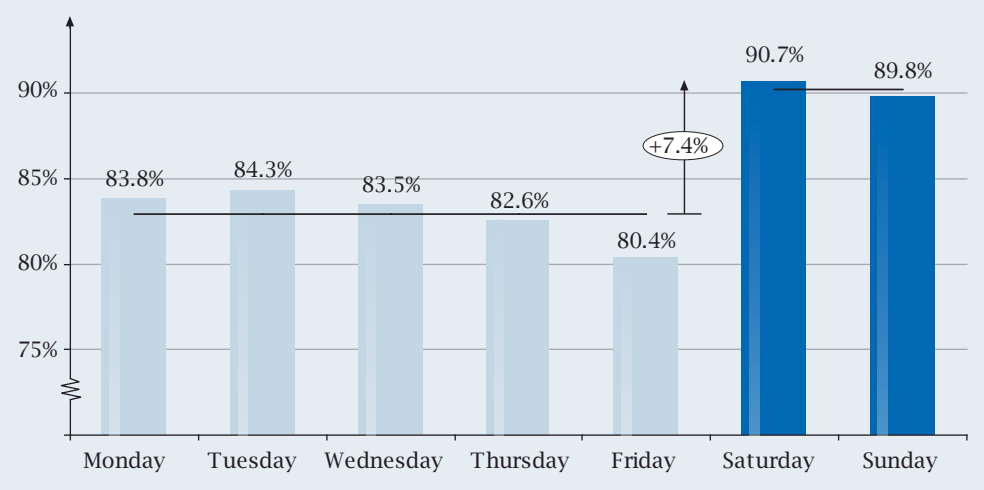
Figure 9 Number of trains affected by incidents depending on rail traffic density



Source: BSL Management Consultants, *Drivers and challenges for rail freight quality in the European market*, 2007

Congestion of infrastructures has a dramatic impact on punctuality. A concrete illustration of this phenomenon is given by the Dutch case, where Prorail measured the difference in punctuality between busy week days and the less busy week-ends, as demonstrated by Figure 10.

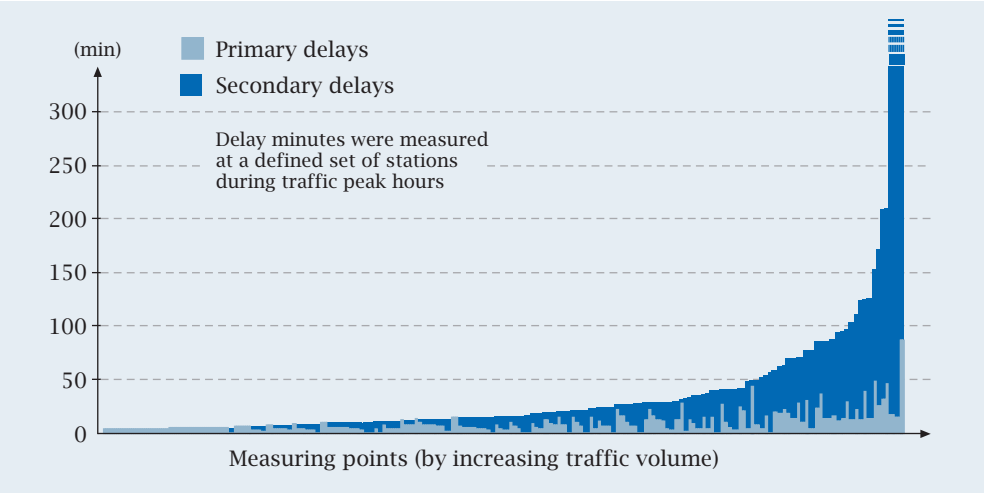
Figure 10 Train punctuality at weekdays and weekends in the Netherlands



Source: BSL Management Consultants, *Drivers and challenges for rail freight quality in the European market*, 2007

As shown above, punctuality improves dramatically at weekends when the network is less heavily used. During the week, when the network is more heavily used, there is a greater chance that a primary delay causes domino effects. The exponential growth of total delays as a function of train frequency (i.e. when approaching saturation/congestion) is massive. As apparent from the graph underneath, the ratio of secondary versus primary delays soars to a factor of 7 in high traffic density.

Figure 11 Accumulated delay minutes caused by infrastructure failures



Source: BSL Management Consultants, *Drivers and challenges for rail freight quality in the European market*, 2007

Saturation of infrastructure is inflicting the traffic flow with a high degree of vulnerability. With ceteris paribus conditions in infrastructure and operational management, delay rates will grow exponentially as a function of growing traffic volumes, especially because of secondary delay-effects.

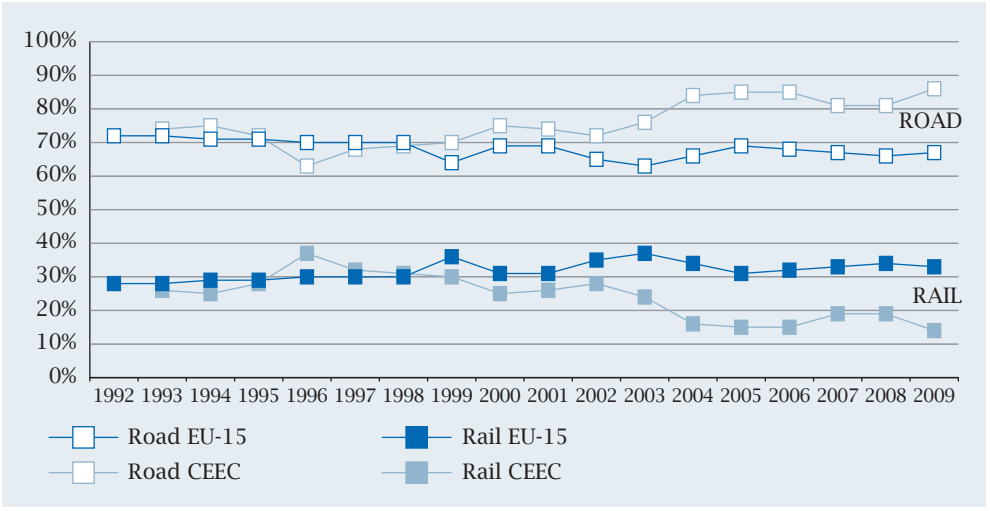
Besides, poorly maintained infrastructure and deferred renewals and/or upgrades lead to speed restrictions and delays, and ultimately to poor quality and punctuality for the customer. In the longer term, it can lead to the closure of lines, which creates an additional loss of competitiveness with respect to other modes.

Infrastructure quality and availability therefore has a tremendous impact on the quality and competitiveness of rail freight services, due to its influence on key parameters of modal choice for freight customers identified in section 1.2, such as reliability of transport, available capacity or transport time. Sufficient investment in rail infrastructure is therefore a must to reach the goals of the 2011 Commission White Paper.

1.6.2 Chronic underinvestment in rail infrastructure

In both EU-15 and CEEC, the biggest proportion (more than 2/3 in 2009) of transport infrastructure investment goes towards road infrastructure. This has been the case since 1992, as demonstrated by Figure 12. This imbalance has substantially increased in CEEC as of 2002, with a deep rise in the share of transport infrastructure investment going towards road infrastructure, and a deep decrease in the share allocated to rail infrastructure. This situation is problematic, given the negative impact of insufficient investment in rail infrastructure on rail freight's quality, as shown in section 1.6.1. The trend should be reversed as a matter of urgency in order to reinforce the competitiveness of rail freight and to trigger further improvement of the quality of rail freight services.

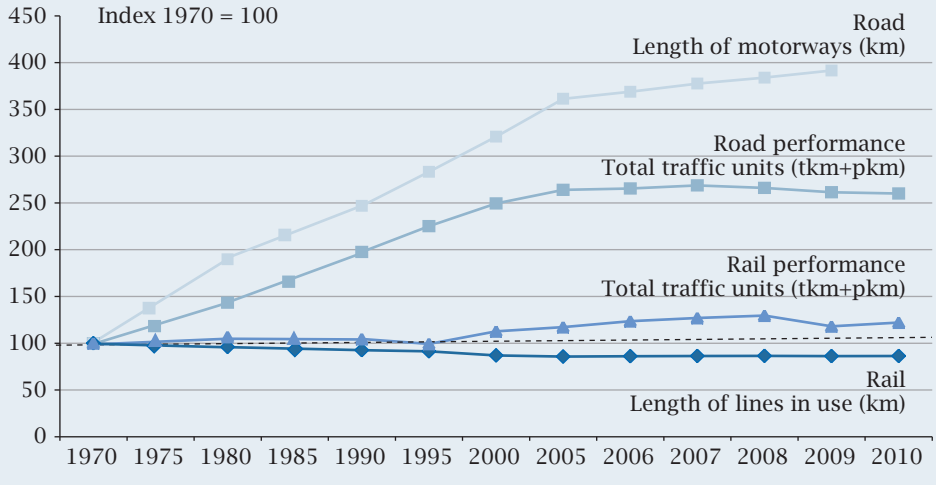
Figure 12 Rail and road modal share of transport infrastructure investment in EU-15 and CEEC, 1992-2009



Source: ITF/ECMT, 2011

The chronic underinvestment in rail infrastructure is visible when comparing the growth of rail infrastructure with the growth or motorways in EU-15 since 1970 (see next figure). Indeed, in 40 years, the length of railway lines fell by 14%, while the length of motorways was almost multiplied by 3. In spite of this chronic underinvestment, rail has managed to grow in absolute volume, through productivity gains. Meanwhile, even though road has benefited from a much greater share of the public budget, the growth of volumes transported by road has not matched the growth of motorway's length, indicating a deterioration of road freight productivity.

Figure 13 Rail track versus motorway length in EU-15, 1970-2008



Source: European Commission, *ETIF 2010*

Rail services are only as good as the infrastructure they run on. CER together with MEP Dominique Riquet (EPP, FR) organised an exhibition in the European Parliament in May 2012 to present and demonstrate the use of the different financing instruments for railway infrastructure offered by the EU and member states, showing best practices and suggesting how financing could be optimised. The panels of the exhibition were compiled into a leaflet which can be downloaded from the CER website (www.cer.be).

Rail freight market developments

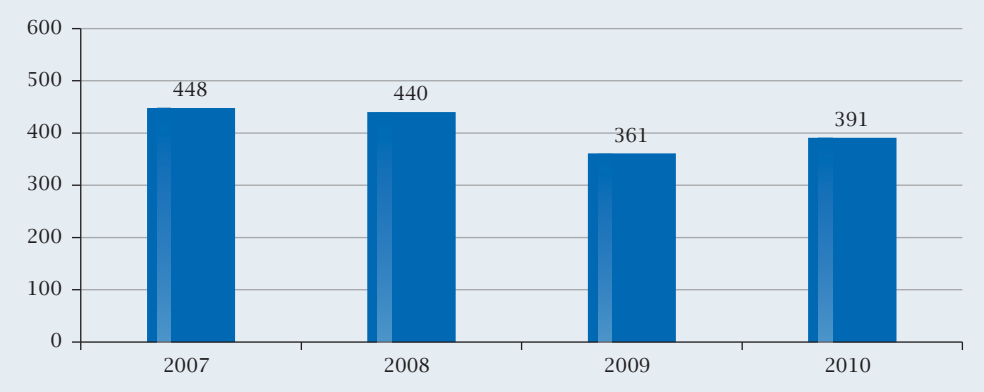
2

The previous chapter examined the parameters that have, or have had, an influence on rail freight's competitiveness and quality. This chapter aims to evaluate the degree of competitiveness of rail freight by focusing on rail freight market developments, starting with the evolution of rail freight volumes and an analysis of the economic crisis' impact on rail freight. The chapter also examines the evolution of the modal share within inland freight transport, and the growing imbalance towards road freight, in spite of public policy objectives of modal shift towards rail and inland waterways. It also looks at how specific segments of rail freight are performing. The chapter ends with a snapshot of competition in the sector.

2.1 Decrease of rail freight volumes with the economic crisis

The economic crisis resulted in a dramatic decrease in both road and rail freight transport in 2008 and 2009, after several years of an upward trend. In the EU-27, volumes transported by rail freight transport decreased by 17% in 2009, after a drop of 2% in 2008[19].

Figure 14 Volumes handled by rail freight (in billion tkm), EU-27, 2007-2010



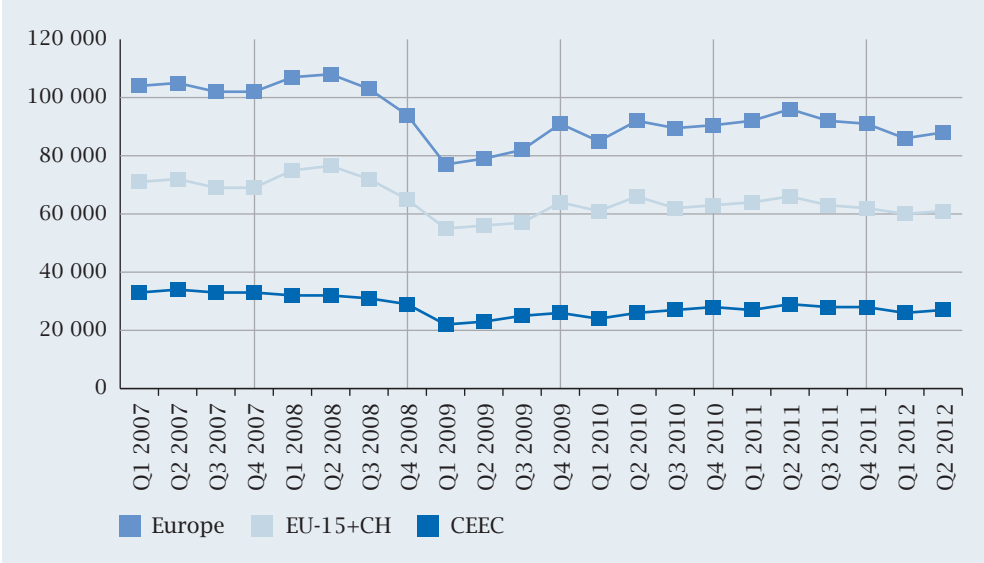
Source: Eurostat, 2012

Rail freight traffic in Europe had been recovering steadily since the 2008 economic crisis. However, as the economy started contracting again at the beginning of 2012, so has the rail freight sector. The performance of the European rail freight market decreased by 6.1% in Q1 2012 and 7.8% in Q2 2012 compared with the same period in the previous year. During this period, the rail freight sector shrank by more than industrial production, which decreased by 1.3% and 1.8%[20] respectively. For the first six months of 2012, rail freight traffic in Europe decreased by 6.9% in Europe.

[19] Eurostat, 2012

[20] Eurostat, *Industry Production Index*, November 2012

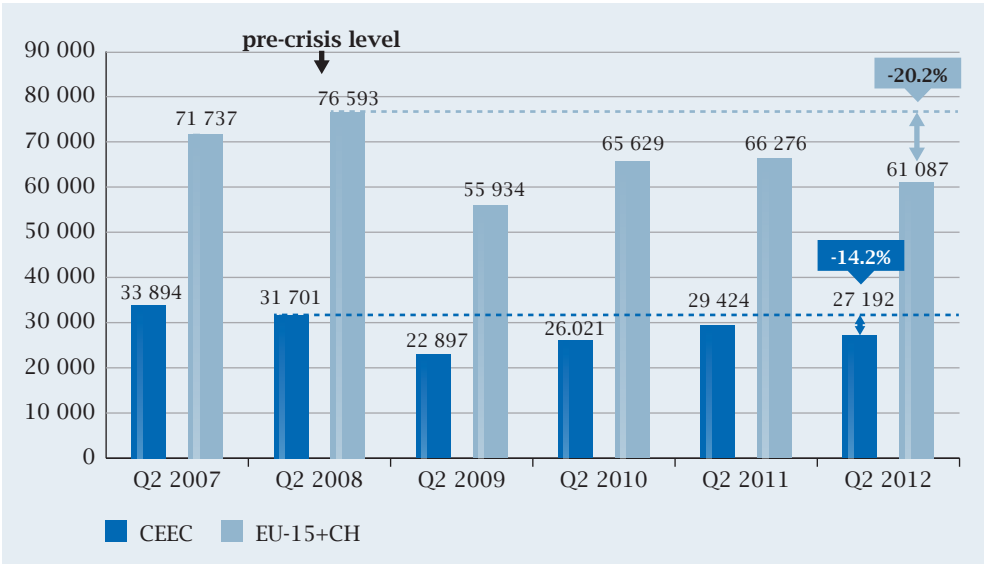
Figure 15 Quarterly rail freight development (in million tkm), Europe, 2007-2012



Source: CER, 2012

Five years after the start of the crisis, rail freight traffic has not gone back to pre-crisis levels, in both EU-15 and Switzerland and in the CEEC. The Q2 2012 level for EU-15 and Switzerland is more than 20% below the Q2 2008 level for the same zone, while the Q2 2012 level for CEEC is more than 14% below the Q2 2008 level.

Figure 16 Rail freight in Europe: comparison of Q2 2012 level to pre-crisis level (in million tkm)

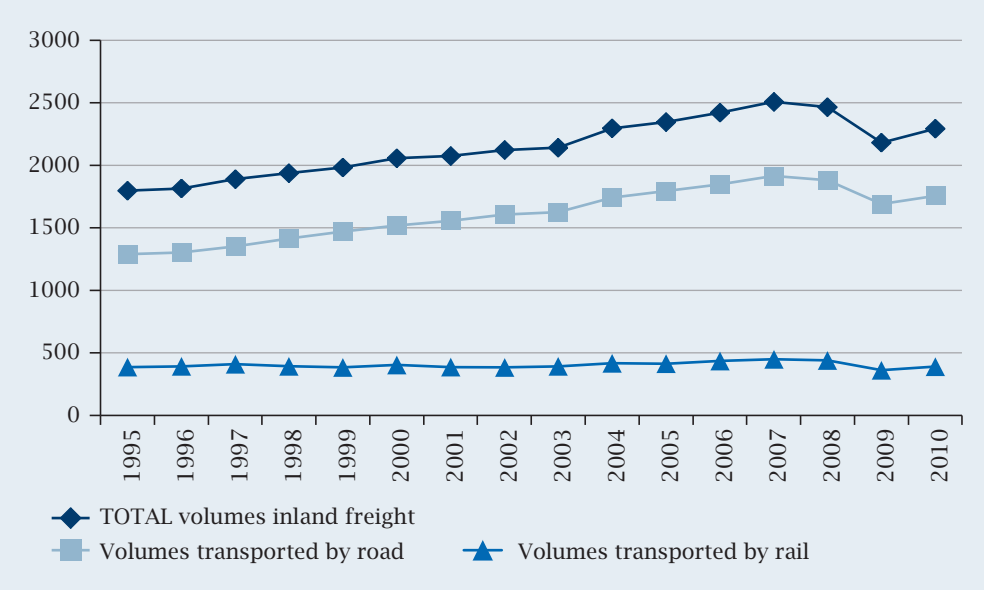


Source: CER, 2012

2.2 Growing imbalance between road and rail freight market shares

Before the economic crisis, volumes transported by rail remained fairly stable, in contrast with volumes transported by road, and total inland freight volumes, which had consistently increased from 1995 to 2008 (see Figure 17). As seen in section 1.6.2, this cannot be disconnected from the difference in infrastructure investments observed between road and rail over the past decades.

Figure 17 Volumes handled by rail and road freight transport in the EU-27, 1995-2010[21]



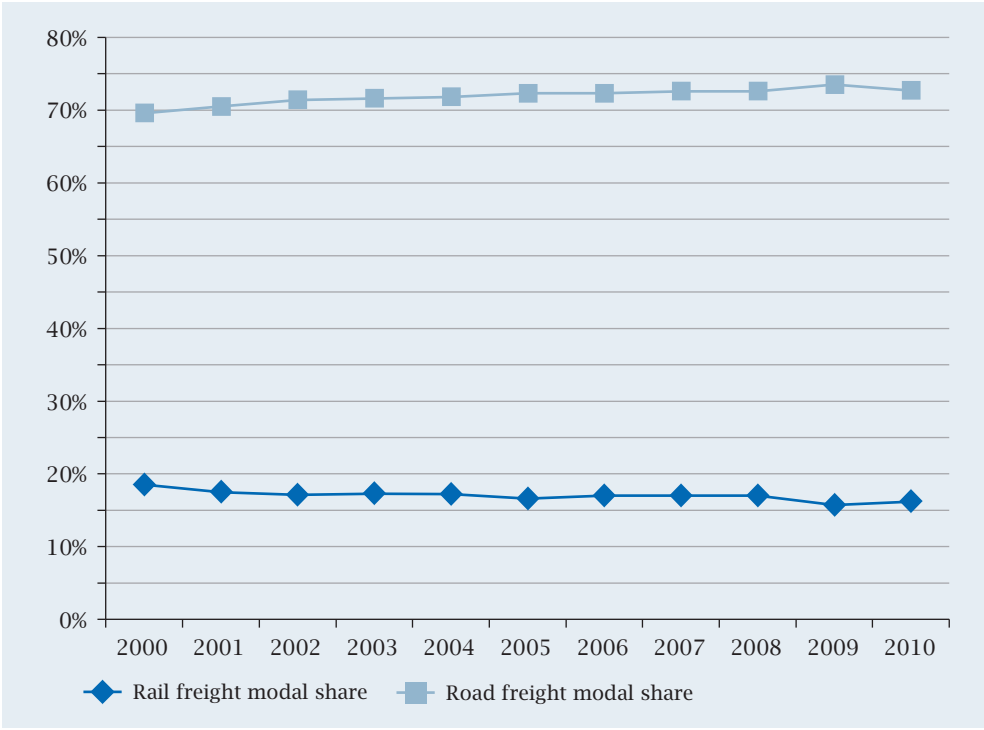
Source: Eurostat, *EU transport in figures: statistical pocket book 2012*

These different trends have resulted in a growing imbalance between road and rail market shares over the years, in spite of policy measures to reinforce the competitiveness of rail freight and provoke a modal shift towards rail. The relative importance of road freight transport, as a share of total inland freight transport, rose by 3.1 percentage points in the EU-27 between 2000 and 2010, while the share carried by rail fell by 2.3 percentage points[22].

[21] Excludes transport of goods by pipelines

[22] RMMS Eurostat data, September 2012

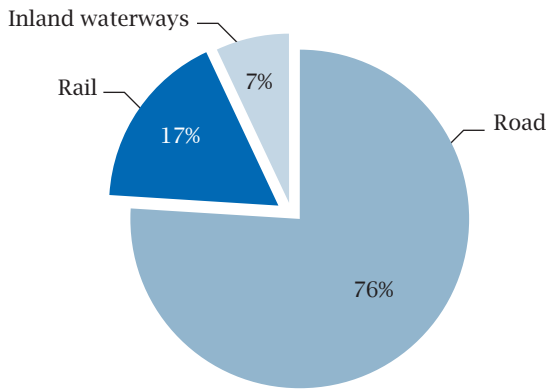
Figure 18 Relative importance of rail and road freight transport as a share of total inland freight transport, EU-27, 2000-2010[23]



Source: European Commission, *ETIF (EU Transport In Figures)*, September 2012

In 2010, total inland freight transport in the EU-27 was estimated to be close to 2 300 billion tonne-kilometres (tkm). A little over three quarters of this freight total was transported over roads. The share of inland freight that was transported by road was nearly four and a half times as high as the share transported by rail.

Figure 19 Modal split of inland freight transport in the EU-27, 2010[24]



Source: Eurostat, 2012

[23] Excludes transport of goods by pipelines
[24] Excludes transport of goods by pipelines

The situation in Europe is not homogeneous: indeed, the modal split for total inland freight transport varies greatly within the EU. The imbalance between road and rail freight is particularly acute in Ireland, Greece, Spain, Portugal, Luxembourg and Italy, where the large majority of inland freight is transported by road transport (about 90% in 2010). The situation is much more positive for rail freight in Latvia and Estonia, where over half of inland freight is transported by rail (57% and 54.2% respectively in 2010), due to their strategic location between the EU and Russia, and slightly more positive in Lithuania, Sweden and Austria, where more than one third of inland freight is carried by rail[25].

The evolution of the modal split between 2000 and 2010 has also been particularly heterogeneous, with a particularly drastic reduction of rail's modal share in Central and Eastern European countries (-16.4% on average for EU-12 between 2000 and 2010), as shown in Figure 20. The share of rail only increased moderately (more than 1% increase between 2000 and 2010) in Austria, Germany, Denmark, Latvia, the Netherlands, Sweden and the UK. In most other countries, it stagnated or dropped significantly (-33.3% in Bulgaria, -24.1% in Romania, -19.3 in Slovakia and -18.7% in Poland, -17.3% in Slovenia, -13.1% in Estonia, -10.7% in the Czech Republic, -10% in Hungary, 7.2% in France, 5.3% in Luxembourg).

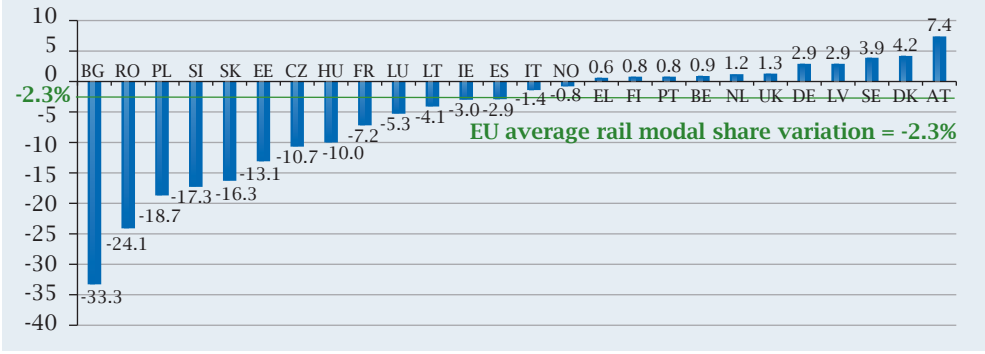
[25] Eurostat, 2012

Figure 20 Rail freight transport as a share of total inland freight transport (road, rail, inland waterways and pipelines), EU-27, 2000-2010

Rail modal share	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Δ 2000 - 2010
EU-27	18.5%	17.5%	17.1%	17.3%	17.2%	16.6%	17.0%	17.0%	17.0%	15.7%	16.2%	-2.3%
EU-15	14.3%	13.7%	13.3%	13.5%	13.6%	13.4%	14.1%	14.3%	14.6%	13.7%	14.2%	-0.1%
EU-12	38.2%	35.2%	33.9%	33.2%	31.7%	29.0%	27.5%	26.0%	24.5%	21.9%	21.8%	-16.4%
AT	26.9%	26.0%	25.8%	25.4%	27.9%	28.9%	30.1%	31.2%	33.2%	31.6%	34.3%	7.4%
BE	11.4%	10.2%	10.5%	10.8%	11.7%	13.1%	13.8%	15.0%	15.5%	12.5%	12.3%	0.9%
BG	43.8%	35.8%	32.4%	33.7%	28.7%	25.0%	26.6%	24.6%	20.1%	11.8%	10.6%	-33.3%
CZ	31.0%	29.3%	25.8%	24.7%	23.9%	24.5%	23.0%	24.5%	22.5%	21.3%	20.3%	-10.7%
DE	18.6%	18.0%	18.2%	18.9%	19.3%	19.6%	20.7%	21.3%	21.5%	20.2%	21.5%	2.9%
DK	6.6%	7.2%	6.4%	6.6%	7.6%	6.5%	6.8%	6.5%	7.3%	7.6%	10.8%	4.2%
EE	67.3%	64.7%	68.9%	70.9%	67.3%	64.6%	65.3%	56.8%	44.7%	52.7%	54.2%	-13.1%
EL	1.5%	1.3%	1.0%	1.4%	1.6%	1.8%	1.9%	2.9%	2.6%	1.9%	2.0%	0.6%
ES	6.9%	6.5%	5.7%	5.5%	5.1%	4.6%	4.4%	4.0%	4.2%	3.5%	4.0%	-2.9%
FI	24.0%	24.4%	23.2%	24.5%	23.8%	23.3%	27.1%	25.9%	25.7%	24.1%	24.8%	0.8%
FR	19.7%	17.9%	18.0%	17.1%	16.1%	14.7%	14.5%	14.4%	14.6%	13.8%	12.5%	-7.2%
HU	28.3%	25.8%	26.4%	25.6%	25.9%	23.3%	22.3%	19.7%	19.4%	16.0%	18.3%	-10.0%
IE	3.8%	4.0%	2.9%	2.5%	2.3%	1.7%	1.2%	0.7%	0.6%	0.7%	0.8%	-3.0%
IT	10.5%	9.9%	9.2%	9.9%	9.6%	9.2%	10.8%	11.7%	11.1%	9.1%	9.1%	-1.4%
LT	44.3%	37.2%	38.5%	40.9%	41.3%	38.0%	38.3%	40.3%	41.3%	39.5%	40.2%	-4.1%
LU	7.3%	6.1%	5.4%	5.0%	5.3%	4.1%	4.6%	5.5%	2.8%	2.3%	2.1%	-5.3%
LV	54.2%	52.4%	57.1%	64.3%	63.6%	62.7%	53.9%	53.5%	57.6%	65.9%	57.0%	2.9%
NL	3.4%	3.3%	3.1%	3.6%	4.0%	4.2%	4.6%	5.3%	5.1%	4.7%	4.6%	1.2%
NO	13.9%	13.3%	12.4%	11.6%	11.4%	12.1%	12.3%	12.9%	12.9%	14.1%	13.1%	-0.8%
PL	35.9%	32.4%	31.3%	30.0%	29.0%	26.6%	25.8%	23.7%	21.8%	17.6%	17.2%	-18.7%
PT	5.2%	5.0%	5.1%	4.9%	5.2%	5.3%	5.1%	5.2%	6.1%	5.7%	6.1%	0.8%
RO	47.2%	41.1%	33.1%	29.5%	27.0%	21.1%	19.0%	18.5%	18.6%	19.0%	23.1%	-24.1%
SE	35.3%	35.7%	34.4%	35.5%	36.1%	36.0%	35.8%	36.4%	35.1%	36.8%	39.3%	3.9%
SI	35.0%	28.7%	31.8%	30.0%	25.9%	22.7%	21.8%	20.8%	17.8%	16.0%	17.7%	-17.3%
SK	35.6%	35.8%	33.9%	31.2%	28.4%	24.9%	26.0%	22.4%	20.7%	17.0%	19.3%	-16.3%
UK	9.3%	10.0%	9.6%	9.5%	11.5%	11.1%	11.1%	10.5%	11.0%	11.3%	10.6%	1.3%

Source: European Commission, *ETIF (EU Transport In Figures)*, September 2012

Figure 21 Absolute variation of rail modal share between 2000 and 2010 (in percentage points)



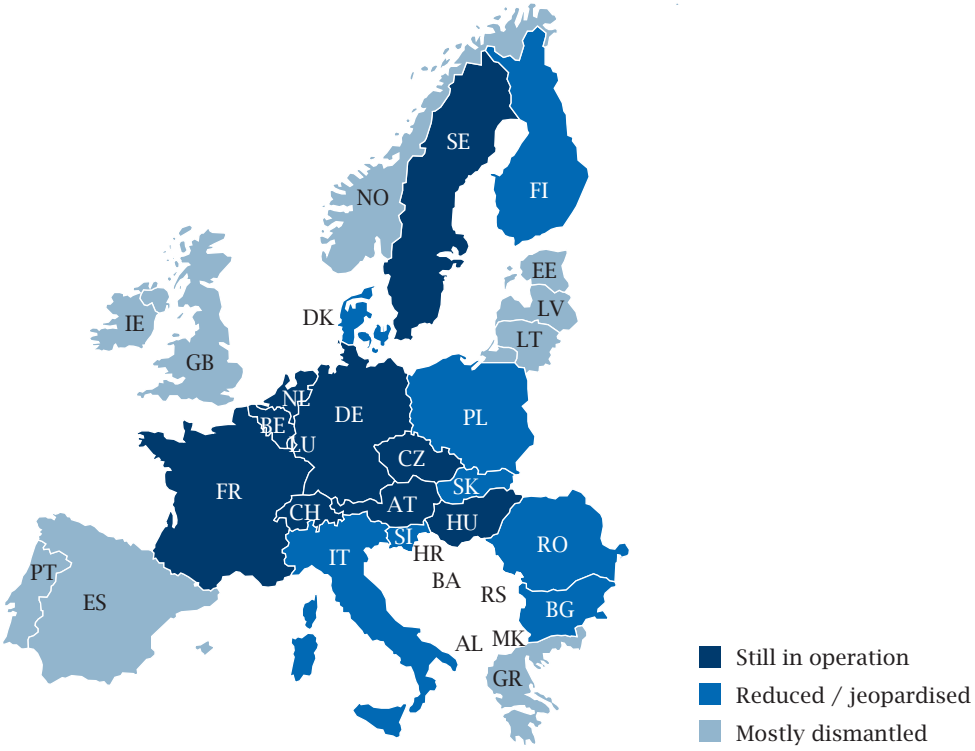
Source: European Commission, *ETIF (EU Transport in Figures)*, September 2012

2.3 Market developments for specific segments of rail freight

2.3.1 Single wagonload

The situation of single wagonload in Europe is extremely disparate. Single wagonload traffic is jeopardized in several countries, where deindustrialisation or the low density of the industrial web makes it difficult to sustain this business. Single wagonload transport is mainly used in the central parts of Europe, where the industrial web is denser, and in Sweden, where infrastructure charges are the lowest.

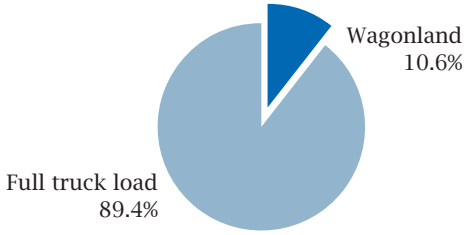
Figure 22 Geographical distribution of single wagonload



Source: CER, *Factsheet on single wagonload freight*, 2012

Single wagonload only has a small market share of the overall European freight market accessible to trucks (i.e. truckload and single wagonload, excluding intermodal and block trains), due to intense competition from road transport (see Figure 23).

Figure 23 Market share of single wagonload versus truckload

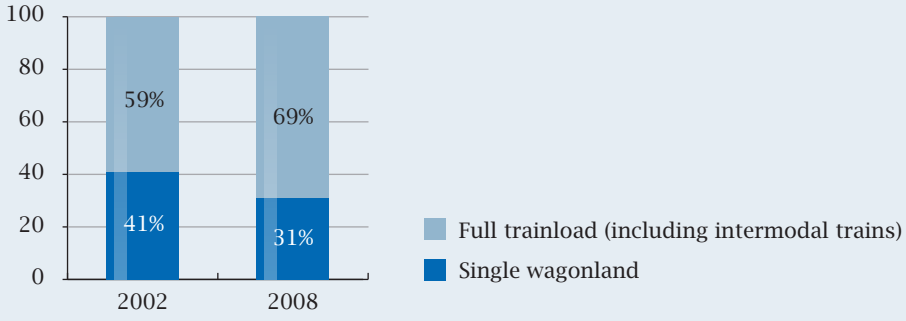


Source: McKinsey, Xrail figures - Research based on statistics of EU-27 & Switzerland, 2006

Main customers are the steel industry, chemical industry, paper and pulp industry, and automotive industries.

In the past few years, the share of the rail freight market covered by the single wagonload business has dropped, while the share of the full trainload market has increased.

Figure 24 Market share of single wagonload versus full trainload

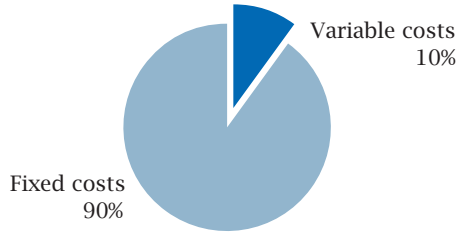


Source: McKinsey, Xrail figures - Research based on statistics of EU-27 & Switzerland, 2006

Increasing transport volumes and consolidation of transport flows has partly led to a shift from wagon groups towards full trains. However, part of the single wagonload business has also been taken over by intermodal rail-road transport and by road-only transport.

Single wagon operators need to bear very high fixed costs, mainly related to wagon and locomotive expenses and shunting activities as well as track access charges linked to the operations and maintenance of the rail infrastructure. Operators need to handle high volumes to be competitive vis-à-vis other transport modes which benefit from a lower proportion of fixed costs.

Figure 25 Single wagonload cost structure



Source: McKinsey, Xrail figures - Research based on statistics of EU-27 & Switzerland, 2006

Single wagon traffic is hardly always competitive compared to road transport. Marshalling and routing wagons on several trains is particularly demanding and can have an impact on punctuality. Tracking systems for single wagons are complex, which makes it more difficult for railway undertakings to provide real-time estimated times of arrival.

In addition, in deindustrialised areas or in areas where the industrial web is particularly sparse, the collection of single wagons has to take place on larger territories; small numbers of wagons have to run longer distances to the nearest marshaling yard in order to assemble a longer train. This, of course, adds on costs to which road transport is not exposed.

Finally, price-wise, often very high track access charges have a negative impact on the competitiveness of this model compared with road transport which generally enjoys lower or no infrastructure fees (tolls).

The decline of industrial sectors that have been traditional users of the single wagon model, together with the economic downturn, have resulted in a drop of volumes, which has further reduced marginal returns for railway undertakings necessary to cover their fixed costs. Whereas the single wagon model is generally not profitable, revenues have dropped even further with a reduction in the overall level of demand.

CER has produced a factsheet on single wagonload, which is available on the CER website (www.cer.be).


CER Factsheet - Single Wagonload Freight

2.3.2 Rail-road combined transport

Rail-road combined transport (CT) is a form of intermodal transport where the major part of the journey is by rail, and any initial and/or final legs carried out by road are as short as possible. Taking a container or truck off the road and putting it on a long distance freight train, using trucks only for short pre- and post-carriage links, cuts specific energy consumption by almost half[26].

Railway companies offer two types of rail-road combined transport:

- **Accompanied combined transport**, also known as 'rolling road', where the whole road vehicle is involved (i.e. the traction cabin too, which is driven onto a special wagon), and where the driver accompanies his vehicle in a specially fitted wagon.
- **Unaccompanied combined transport**, where the goods travel in swap bodies, standardised containers or semi-trailers and are transferred from one mode of transport to another using a purpose-built terminal.

Goods can be transported via rolling motorways[27], swap bodies[28] or containers and semi-trailers.

[26] UIC & CER, *Railways and the environment: Building on the railway's environmental strengths*, 2009

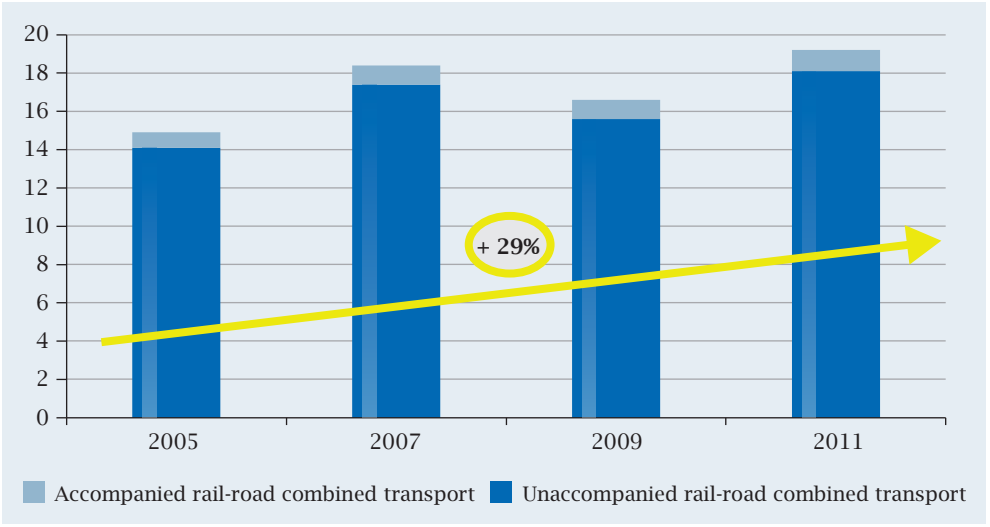
[27] Transport of complete road vehicles using roll-on roll-off techniques, on trains comprising low-floor wagons throughout

[28] Freight carrying unit optimised to road vehicle dimensions and fitted with handling devices for transfer between modes

Until the late 1990s, combined rail-road transport was a rather small market. In the whole of Europe, some 30 specialised companies – disregarding railways operating rail traction services – were supplying specialised Combined Transport (CT) services. The UIC *2012 Report on Combined Transport* identified a total of 135 companies which provided unaccompanied CT services in the year 2011. This represents 19 additional companies compared to the previous report from 2009. The growth of the unaccompanied CT industry is mainly resulting from new CT operators even if some historical combined transport operators have disappeared since the publication of the previous UIC report in 2009.

Volumes transported by rail-road combined transport have consistently increased since 2005, with the exception of 2009, marked by the economic crisis, during which overall freight volumes decreased sharply. The growth rate between 2005 and 2011 reaches nearly 29%, providing evidence that the European combined transport industry has more than compensated for the downturn encountered in the economic crisis in the year 2009.

Figure 26 Volumes transported via rail-road combined transport (in millions of TEU), 2005-2011



Source: KombiConsult, *UIC combined transport report 2012*

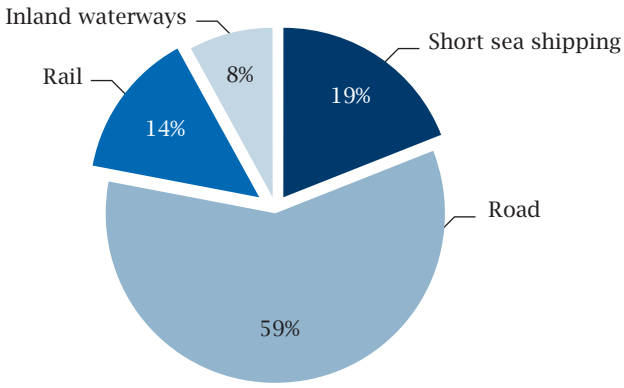
Total combined rail-road traffic in Europe is expected to increase further in the coming years. Part of this growth is linked to overall transport growth. At the same time we can see a decline of single wagonload activity which is partly absorbed by rail-road intermodal transport.

2.3.3 Rail-maritime freight

Due the development of maritime containerised transport, intermodal transport has developed dramatically in the past 30 years, becoming the fastest growing freight transport segment in Europe. The need to reduce ports' congestion by providing efficient links between ports and hinterland terminals has also become more pressing, explaining the success of maritime intermodal freight.

Due to road congestion and the need to reduce freight's environmental footprint, many European ports have aimed to make more use of rail freight. However, the modal split for inland transport of containers is still strongly in favour of road freight, in spite of individual ports' efforts.

Figure 27 Ports modal share, 2011[29]



Source: EIA, *Intermodal Yearbook*, 2011-2012

CER has produced a factsheet on intermodal freight transport which can be found on the CER website (www.cer.be).

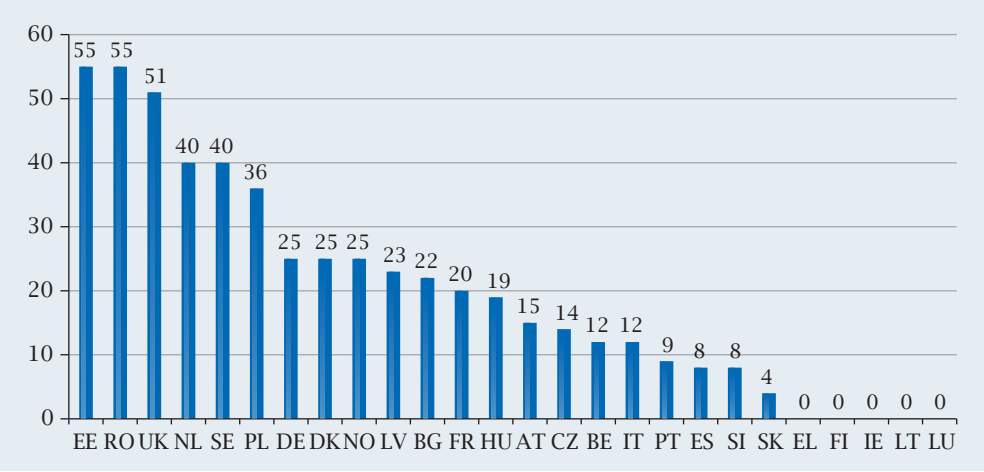
[29] Averages based on data from the ports of Antwerp, Barcelona, Hamburg, Rijeka and Amsterdam

2.4 Competition (rail market opening)

Since the start of the opening of the rail freight market in 2003, competition has developed progressively across Europe. As a result, in some countries the rail freight market has been dramatically reshaped. In Romania and Estonia, for example, the market share of new entrants (measured in tkm) has reached over 50% in less than 10 years. The picture varies greatly from country to country, as shown in Figure 29.

Nevertheless, the European Commission's RMMS (Rail Market Monitoring Scheme) data indicate that new entrants have reached a weighted average market share of 25% across EU countries plus Norway. In the past 4 years, this average share has almost doubled (from 14% in 2006 to 25% in 2010).

Figure 28 Market share of new entrants in rail freight in 2010 (% of total rail freight market)



Source: European Commission, *Rail Market Monitoring Scheme (RMMS)*, September 2012

Figure 29 Evolution of market share of new entrants in rail freight, 2006-2010 (% of total rail freight market measured in tkm)

EU-27 (- Cyprus and Malta, + Norway)	Market share 2010	Market share 2008	Market share 2006
AT	15	14	10
BE	12	6	3
BG	22	14	3
CZ	14	7*	0*
DE	25	22	16
DK	25	13*	0
EE	55	49	31
EL	0	0	0
ES	8	5	5
FI	0	0	0
FR	20	10	1
HU	19	14	9
IE	0	0	0
IT	12*	12*	12
LT	0	0	0
LU	0	0	0
LV	23	10	11
NL	40	33	18
NO	25	14	10
PL	36	24	17
PT	9	0	0
RO	55	41	27
SE	40	36*	33
SI	8	0	0
SK	4	2	3
UK	51	44	37*
Weighted European Average	25	19	14

** Extrapolated missing data (in order to derive meaningful year-on-year European average, the rare missing RMMS data had to be created using extrapolations)*

Source: European Commission, *Rail Market Monitoring Scheme (RMMS)*, September 2012

Evaluation of freight quality

3

In a market driven by competition, quality is, together with cost, an important factor for transport choice, both within and across modes. This chapter focuses on quality developments since the last *CER Rail Freight Quality Progress Report* (2008), from the number of signed quality clauses to punctuality, reliability parameters and quality management systems. It also examines another important quality parameter: the environmental footprint of rail freight services.

3.1 Quality management systems

Quality management systems are a set of policies, processes and procedures required for planning and execution in the core business area of an organisation. They enable the organisations to identify, measure, control and improve the various core business processes that will ultimately lead to improved business performance. Railway undertakings are faced with a number of quality management systems, such as the well-known ISO 9001 and ISO 14001 on environmental standards, ISO 28000 on security, AEO (Authorised Economic Operator) on customs related security management, SQAS (Safety and Quality Assessment System) for the chemical industry, OHSAS 18001 (Occupational Health and Safety Assessment Series) for health and safety at the work place, VDA 6.2 for the automotive industry, etc.

The table below gives an overview of the quality management systems of several European rail freight companies, according to a survey of the UIC Quality Working Group. It shows that all companies either already have one or more quality management systems, or are planning to have them in the near future.

Figure 30 Current state of management systems/certifications of several European rail freight companies

	ISO 9001	SQAS	ISO 14001	OHSAS 18001	VDA 6.2	EN 3834	EU-SR 2004/49/EG	Others	Preparation
Railion Deutschland	✗	✗	✗					HACCP EfBV**	
Trenitalia Logistica	✗		✗	✗					
Railion Nederland	✗	✗							
Rail Cargo Austria (RCA)	✗	✗	✗	✗	✗		✗		
SBB Cargo AG	✗	✗				✗	MoU ECM	EN 15085 Label COCERAL-GHP (HACCP)	ISO 14001 OHSAS 18001
SBB Cargo Deutschland	✗	✗					✗		
SBB Cargo Italia	✗						✗		
Slovenske Zeleznice (SZ)	✗		✗						
Green Cargo	✗		✗						OHSAS 18001
PKP Cargo	✗		✗						HACCP OHSAS 18001
GYSEV	✗		✗	✗			✗		
GYSEV CARGO	✗		✗	✗			✗		
BLS Cargo	✗								
SNCF Fret	✗	✗							
ZSSK Cargo	✗								
SNCB	✗	✗	✗						
RENFE	✗		✗						
VR	✗		✗						EU-SR 2004/49/EG
RCH	✗			✗			✗		
CFL Cargo	✗			✗			✗		
BDZ									ISO 9001:2000

- *ISO 9001: Standardised requirements for a quality management system*
- *SQAS: Safety and Quality Assessment System (for the chemical industry)*
- *ISO 14001: Requirements for environmental management systems*
- *OHSAS 18001: International occupational health and safety management system specification*
- *VDA 6.2: Quality management standard (for the automotive industry)*
- *EU-SR 2004/49/EC: Directive 2004/49/EC of the European Parliament and of the Council of 29 April 2004 on safety on the Community's railways and amending Council Directive 95/18/EC on the licensing of railway undertakings and Directive 2001/14/EC on the allocation of railway infrastructure capacity and the levying of charges for the use of railway infrastructure and safety certification (Railway Safety Directive)*
- *HACCP: Hazard Analysis Critical Control Points*
- *EN 3834: Quality Requirements for Welding*
- *EfBV: Entsorgungsfachbetriebeverordnung (Verordnung über Entsorgungsfachbetriebe)*

Source: Survey UIC Quality Working Group, August 2012

3.2 Quality clauses

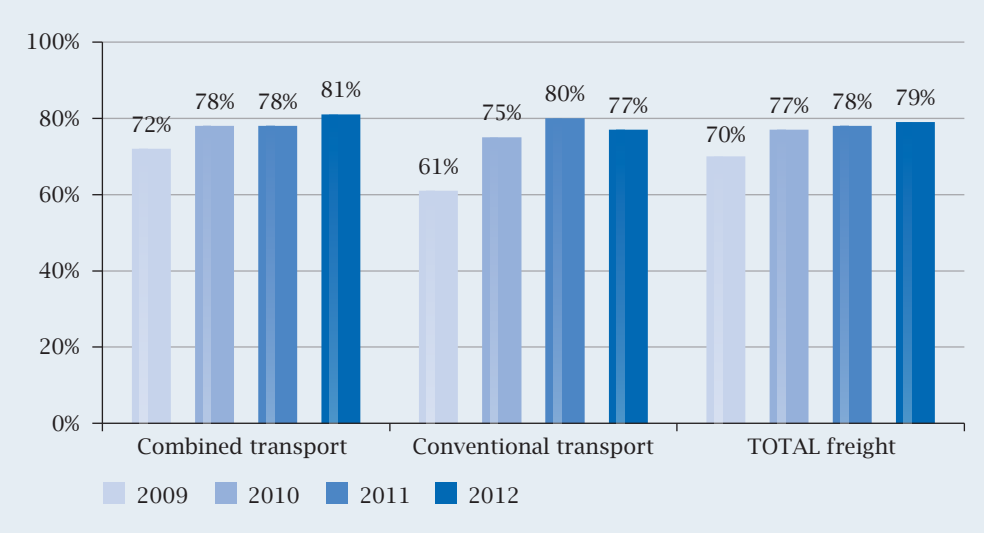
Since the signing of the *CER/UIC/CIT Freight Quality Charter* in July 2003 (see Chapter 4), CER has been monitoring the progress of the percentage of business covered by quality clauses.

Figure 31 Percentage of rail freight business (tkm) covered by quality clauses, 2003-2006

Source: Average calculated on the basis of CER members' contributions, 2007

The table below shows this evolution from 2009 to 2012, focusing on the percentage of business covered with quality provisions in one or more of the service areas identified in the *Freight Quality Charter*.

Figure 32 Percentage of rail freight business (tkm) covered by quality clauses, 2009-2012



Source: Average calculated on the basis of CER members' contributions, October 2012

Even though figures for 2012 were collected in October 2012, therefore underestimating the total number of quality clauses signed on average by European railways, the figures displayed in Figure 32 show a clear progression in the number of quality clauses, for both conventional and combined transport. This progression is even more visible when comparing figures for the 2009-2012 period with figures from the last *CER Freight Quality Report* for the period 2003-2006 (Figure 31).

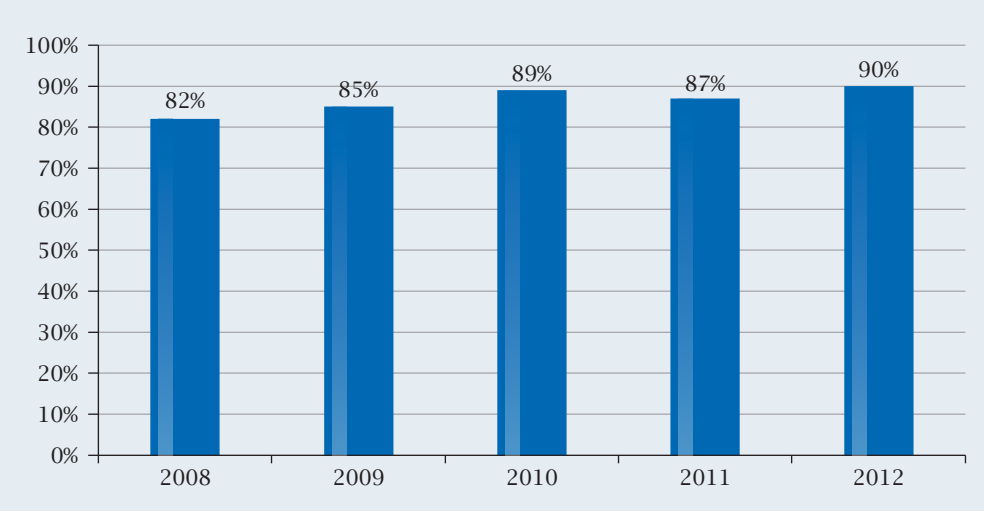
This sharp progression demonstrates the strong commitment of railway undertakings towards freight quality.

In 2008, CER published a report on the quality of rail freight, which can be found on the CER website (www.cer.be).

3.3 Reliability and punctuality

Reliability is an important parameter of freight quality. Train schedules have to be more flexible for rail freight than in the passenger sector. Nonetheless, the percentage of freight trains carried out compared to the number of scheduled freight trains has consistently increased from 2008 to 2012, to reach 90% in 2012.

Figure 33 Reliability: percentage of freight train services carried out compared to the number of scheduled freight trains, EU average, 2008-2012



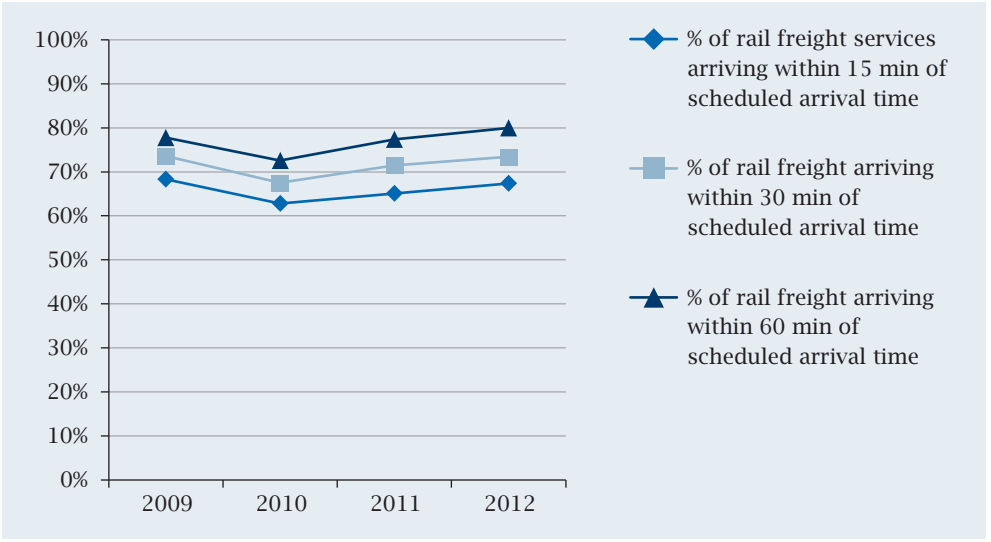
Source: Average calculated on the basis of CER members' contributions

Punctuality is another important parameter of freight quality. Railway undertakings take this matter very seriously and are making efforts to ensure that trains arrive and depart on time.

It must nonetheless be noted that punctuality does not only depend on processes and efforts from individual railway undertakings, but on a variety of external factors, such as transport infrastructure and weather conditions. The particularly cold and snowy winter in 2010 created serious traffic disruptions which had an important impact on rail freight punctuality (see Figure 34).

An appropriate infrastructure network is also an essential parameter to ensure that trains do depart and arrive on time. In an increasingly congested infrastructure network, it is more difficult for railways to be punctual, as shown in section 1.6.1. This is even more the case for freight trains. The rise in both passenger and freight traffic in 2010 has probably had an impact on punctuality. This negative trend has been reversed since then, thanks to important efforts by railway undertakings.

Figure 34 Punctuality of rail freight, EU average, 2009-2012



Source: Average calculated on the basis of CER members' contributions

While punctuality is an important parameter of rail freight's quality, customers also value appropriate information management[30]. The *CER/UIC/CIT Freight Quality Charter* stipulates that railway undertakings shall provide status information to customers as soon as possible, in particular regarding any delays or service changes. It is worth noting that more than three quarters of rail freight companies are able to provide an estimated time of arrival to customers on delayed freight[31].

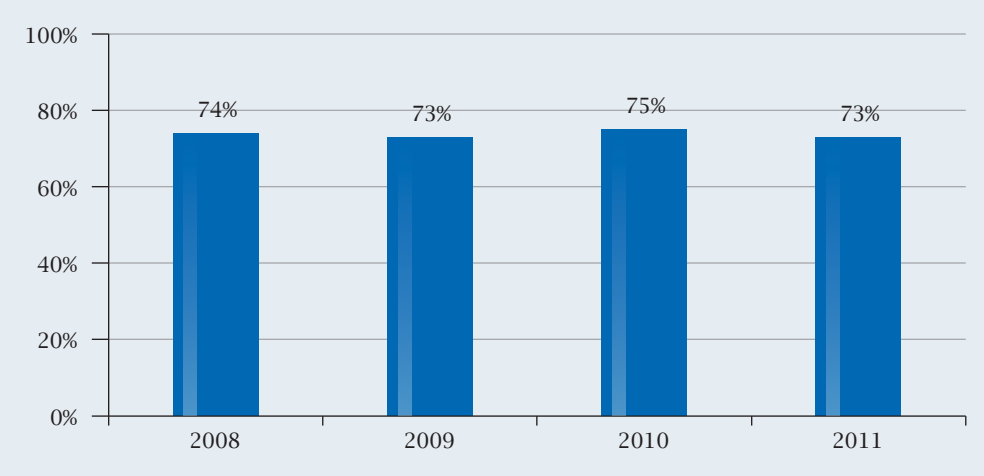
[30] See Figure 1 on customer priorities

[31] Average calculated on the basis of CER members' contributions

3.4 Customer satisfaction and complaints handling

Customer satisfaction is the single most important parameter of rail freight quality: all other criteria are only tools to ensure that customers feel satisfied with the offer provided by rail freight operators. On top of their usual account management activities, over two thirds of rail freight operators conduct regular customer surveys to measure customer satisfaction[32]. According to these internal customer surveys, around three quarters of rail freight customers are satisfied with the service provided[33]. This proportion seems to remain constant over time.

Figure 35 Customer's satisfaction, EU average, 2008-2011



Source: Average calculated on the basis of CER members' contributions

However, unforeseen events, such as delays or damages to freight cargo, can sometimes occur. The *CER/UIC/CIT Freight Quality Charter* encourages railway undertakings to integrate specific compensation mechanisms individually negotiated in rail freight contracts. Such mechanisms provide for the compensation structure, levels and thresholds. The huge majority of rail freight operators (93%[34] for 2012) provide compensation to customers (financial or otherwise) in case of damages incurred to the cargo transported. Similarly, almost three quarters[35] of railway undertakings report that they provide compensation (financial or otherwise) to customers in case of delays or cancellations of freight services, as part of their commercial contracts.

[32] Average calculated on the basis of CER members' contributions
[33] Average calculated on the basis of CER members' contributions
[34] Average calculated on the basis of CER members' contributions
[35] Average calculated on the basis of CER members' contributions

Industry's ongoing efforts to enhance rail freight quality and competitiveness

4

Chapter 1 set the scene and examined parameters that had an impact on rail freight's competitiveness and quality, including legislative and interoperability measures adopted at European level. It also identified the criteria behind specific modal choices. Chapter 2 gave a snapshot of market developments of rail freight, including specific rail services, showing that the imbalance between rail and road freight transport has increased over time in spite of policy measures adopted during the last decade, and Chapter 3 looked at the progress of rail freight's quality over time. Chapter 4 focuses on industry's ongoing efforts to enhance rail freight quality and competitiveness, demonstrating that the sector has taken this matter very seriously and has been constantly striving to improve its services.

4.1 CER/UIC/CIT Freight Quality Charter

In a market driven by competition, quality remains an important factor, as shown in section 1.2. Companies need to be able to distinguish themselves from other companies, and a high level of quality is one way to do this. To show their commitment to achieve high quality levels, Europe's railways have initiated the *Freight Quality Charter*.

The *Freight Quality Charter* is a voluntary commitment by European railway undertakings on the quality of the services they provide to their customers. The Charter was signed on 4 July 2003 in Rome by the members of CER, UIC and CIT[36].

By signing the charter, the rail freight companies committed themselves to provide attractive freight services at a high quality level. In practice, it means that contracts between railway undertakings and their customers shall include customer quality provisions in one or more of the following service areas:

- Responsibility
- Safety
- Planning
- Punctuality and reliability
- Information
- Rolling stock
- Billing
- After-sales service

In return, railway undertakings' commitment depends on customer support with regard to timely customer presentation of wagons and cargo at the handover point, and proper and timely receipt of customer documentation. In case the agreed quality targets are not met, customers can obtain appropriate compensation.

[36] See Annex I for the complete text of the Charter.

4.2 Other quality agreements

4.2.1 Joint declaration by UIC/CER and FIATA/CLECAT on *Quality in international conventional and combined railway freight traffic*

After the signing of the *Freight Quality Charter*, railway undertakings have taken further steps to develop a quality policy. Another important step was made with the joint declaration by UIC/CER and FIATA/CLECAT on *Quality in international conventional and combined railway freight traffic*. This joint initiative was launched on 15 April 2005 by the UIC/FIATA Permanent Contact Group and aimed to develop a set of quality indicators, building on the *Freight Quality Charter*. The indicators were a response to market demands but had to be realistically achievable for railway undertakings. As a result, customers have had the right to include quality parameters in the contracts they conclude with railway companies for conventional and intermodal block train services. There have been consequences for both parties in case of non-compliance.

4.2.2 UIC/UIRR joint commitment on the quality of combined transport services

Another step to improve quality in rail freight is the joint commitment by railway undertakings (members of the UIC Freight Forum) and combined transport operators (members of UIRR) to develop the quality of scheduled trains operating combined transport services and of contracts covering this quality. This commitment was signed on 16 June 2005 by UIC and UIRR. It states that combined road-rail transport has proven that it can make a valuable contribution to sustainable development. In order to develop combined transport further, railway undertakings and operators have voluntarily agreed to set standards to ensure that combined transport services can compete with road transport in terms of quality. The commitment lists the main elements to be developed by railway undertakings and operators in the framework of the quality contracts by route, especially on the following points:

- Scheduling of trains;
- Appropriate procedures and communication circuits needed for implementing quality contracts;
- Updated train punctuality indicators;
- Reciprocal penalties, charged to the defective party, in case of delay or cancellation;
- Operational information supplied by the different parties.

4.2.3 UIC/FIATA/CIT guidelines for the development and implementation of quality agreements for specific trainloads in international conventional rail freight traffic

Following the drawing up of the guidelines on quality agreement for intermodal and conventional block train services, as described in section 4.2.1, further guidelines for conventional traffic have been developed. On 19 October 2006, FIATA, UIC and CIT signed the *Guidelines for the development and implementation of quality agreements for specific trainloads in international conventional rail freight traffic*. The guidelines are valid for selected, international full trainloads as well as selected groups of at least 10 wagons in conventional rail freight traffic, specifically and contractually agreed between railway undertakings and

their clients. Service specifications are agreed between railway undertakings and clients, and constitute as a complete package the purpose of the respective quality agreement. Service specifications that can be agreed on are:

- Transport quantities;
- Train capacity, i.e. capacity per train, the number of trains per year (maximum and minimum);
- Departure and destination points;
- Routing;
- Timetable, i.e. transport days, latest delivery date (inclusive of transport-specific time allowance), departure, arrival and release date;
- Order and cancellation periods;
- Information: content and frequency.

Quality indicators fixed contractually between the railway undertaking and the clients constitute a basis for measuring the agreed quality, and can include:

- Punctuality and reliability with transport-specific time allowances;
- No-claims bonus, claim settlements and accounting;
- Secure loading conditions;
- Wagon supply (model-specific despatch and availability);
- Train cancellation;
- Reliable information:
- Content: e.g. punctuality, wagons out of sequence;
- Frequency: e.g. level, measuring points;
- After-sales service.

The carrier is responsible for breach of the quality standards he has agreed on with the client. For his part, the client is also responsible for breach of the quality standards he has agreed on with the carrier. The contract parties can agree on penalties in the event of delays. Penalty charging can be set out as follows:

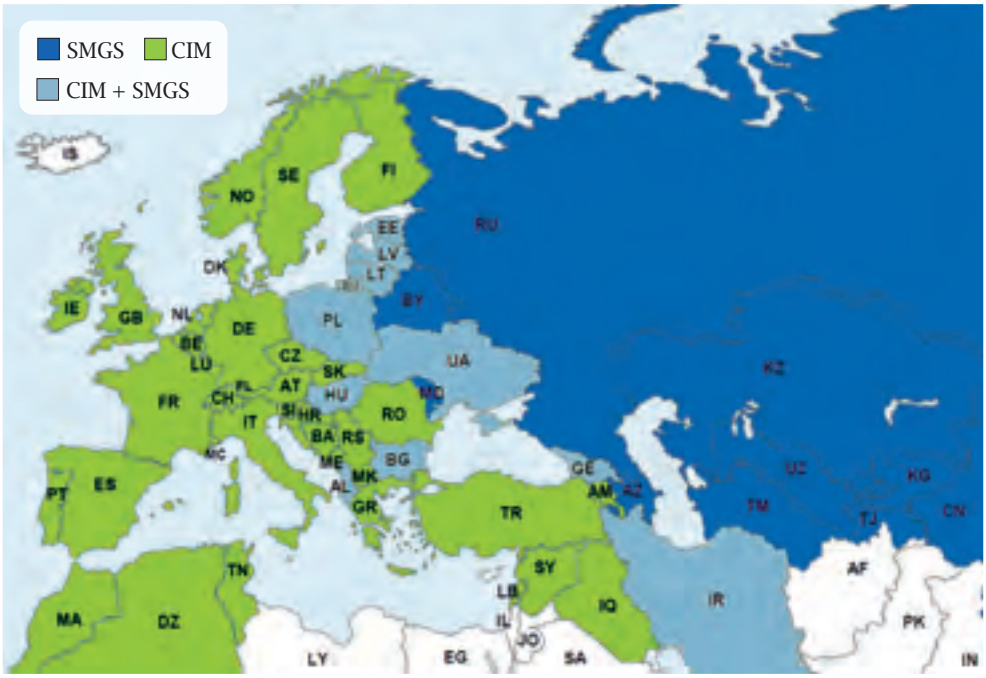
- As a percentage of the price of the delayed rail transport;
- As a lump sum (per train);
- As a bonus-malus system, which outlines the exceeding or failing below fixed punctuality levels during an agreed time period.

This agreement is supported by CLECAT (the European sister organisation of FIATA) and CER as an example of good cooperation between business stakeholders.

These initiatives show the dedication of the railway sector to improve quality. In an open market, quality is a key factor and an important tool for companies to distinguish themselves. Improvement in this field should therefore be led by the market actors themselves.

4.3 CIM/SMGS consignment note: towards a common consignment note for Europe-Asia traffic

Figure 36 Geographical scope of CIM and SMGS, January 2013



Source: CIT, 2013

4.3.1 Coverage of the whole Eurasian network

In 2010, the Russian Ministry of Transport authorised the use of the CIM/SMGS consignment note over the whole rail infrastructure of the Russian Federation (amounting to some 85 000 km, 5 000 stations and including the 1067 mm gauge (3' 6") network on the island of Sakhalin). This significant extension of the scope of the common CIM/ SMGS consignment note also includes the Trans-Siberian and the Baikal-Amur (BAM) main lines which have roles as through routes for rail traffic between Europe and Asia.

Following that, Mongolian Railways (MTZ) notified that the common CIM/SMGS consignment note could be used over its network without restriction. The rail route through Mongolia is an important transit route between China and Russia and shortens transit times by up to three days. Thus, international freight traffic by rail can now be consigned without restriction from the Atlantic to the Pacific using a single common transport document. The common CIM/ SMGS consignment note is only the first step. To create even more benefits for customers, it is planned to provide harmonised liability provisions for this traffic. The legal principles for these provisions were finalised in 2012 (Annex 10 to the CIM/SMGS consignment note).

Regular movement of freight traffic by rail on the Trans-Siberian land-bridge between China, Russia and Europe is also coming ever closer. Not least, this corridor will also allow deep-sea ports to be linked to their hinterlands in Central Europe and Central Asia.

The Republic of Belarus, the Republic of Kazakhstan and the Russian Federation founded a customs union by means of a state treaty dated 6 October 2007. The treaty provides for the creation of a single customs territory on 1 July 2011. From that date the raising of duties and taxes of a similar nature at the internal frontiers was swept away.

The new Customs Code in these countries is the basis for the customs regulations. The three founding states have largely passed their powers for customs matters to the customs union. They may therefore only exercise customs powers if and in so far as the issue is not already covered by the customs union (lacuna-filling competence).

This means a significant reduction in customs formalities and delays at internal frontiers/ customs borders for carriers by rail. In the past these formalities and delays have led to enormous problems for movements by rail, particularly since for movements from Western China to Western Europe there could have been up to six national frontiers to cross (depending on the route) before the creation of the customs union. Now there is just the external customs frontier between China and Russia or China and Kazakhstan to cross.

The foundation of the customs union will help to extend the use of the common CIM/SMGS consignment note significantly.

4.3.2 Next step: improving multimodality

The accession of the Russian Federation to COTIF/CIM, RZD's membership of the CIT and the addition of the Sassnitz-Baltisk and Sassnitz-Ust-Luga maritime services to the CIM list all play an important role for rail ferry services in the Baltic region. The cooperation between DB Schenker Rail Deutschland and RZD offers the opportunity to consign these important rail-sea traffics using the CIM/SMGS consignment note. Use of the CIM/SMGS consignment note on the Sassnitz-Mukran and Klaipeda routes is part of a second project.

Use of the CIM/SMGS consignment note on the Black Sea is also an option but a precondition is that Bulgaria, the Ukraine and Turkey must list the services in the CIM list of maritime services in advance. In its letter of 13 August 2010 to the CIT General Secretariat, UZ expressed the desire to list the ferry route between Ilichevsk in the Ukraine and Derince in Turkey in the CIM list of maritime services. This would also include the land section from the quay to Ilichevsk-ferry station.

UZ is intending to apply the common CIM/SMGS consignment note to these multimodal traffics without restriction so that reconsignment and the creation of a new consignment note are both eliminated. The common CIM/SMGS consignment note will thus reduce costs and improve transit times for these important rail-sea traffics for high value goods. The CIM/SMGS consignment note is also recognised as a customs transit document by the Ukrainian customs authorities. This brings additional reductions in cost and time.

4.4 e-Rail Freight project

On the basis of the estimate that some 10 to 15% of the final costs of transport can be attributed to the costs of paper documents and delays in transit to make them out and check them, a saving in costs of some 20% can be anticipated from the electronic exchange of data. In qualitative terms, processing consignments exclusively by electronic means permits an improved quality of service since the information is not only more reliable and transferred faster but at the same time the problems related to paper documents (such as delays in the movement of the traffic, loss of papers, etc.) can no longer arise.

On this backdrop, the e-Rail Freight project, a joint project of the railway trade associations (UIC, CIT, RAILDATA[37]) together with more than twenty railway undertakings, was conceived in 2008. Its longer term objective is to replace today's paper documentation (consignment notes and accompanying documents) for international freight traffic throughout the COTIF area by electronic data. Documents will then only be printed when and where absolutely necessary (i.e. when legally required).

The initiative and preparatory work was undertaken as a cooperation of CIT and Raildata in that the existing specifications for the CIM consignment note and CUV[38] wagon note were reworked and the technical specification for the messages, interfaces and the data flows were defined. Within the activities related to the CIM/SMGS consignment note (see chapter 4.3.) e-Rail Freight is involved to prepare the new specifications for the inclusion of the CIM/SMGS consignment note in the electronic data exchange.

The specifications drawn up by the e-Rail Freight project will also form the basis for the exchange of information with customs authorities once the modernised Union Customs Code is implemented. The modernised Union Customs Code requires exchange of data with customs authorities to be exclusively by electronic means. The new specification will thus mean and provide a way of replacing the current simplified rail transit procedure based on the CIM consignment note. Specifications have also been drafted for combined transport.

In the meantime, there have been several pilot projects to implement paperless transport in practice. Following intensive work by a project group composed of staff from SNCF Fret and DB Schenker Rail Deutschland undertaken since September 2011, data exchange for paperless transport has been successfully cut-over between the two railways.

Although the legal and technical requirements were clearly defined, there were nevertheless numerous crucial issues to clarify. A common understanding had to be reached on many issues, from the codes used for individual data items to common rules for the format of any printed documents that became necessary.

This bilateral pilot project is a superb example of open and positive cooperation between European railway undertakings, especially when taking competitive pressures into account. Only by cooperating in this way was it possible to bring the whole complex project to fruition in a relatively short time. Most important of all was the inclusion of all the appropriate departments right from the beginning so that all the issues and uncertainties that arose could be clarified together.

[37] International Organisation of Cargo railway undertakings for Development and Production of Central Information and Data Exchange Systems for European Freight Rail Transport, www.raildata.coop

[38] Crossover Utility Vehicle

4.5 Xrail

Xrail[39] is a unique production alliance for the operation of international wagonload traffic between the rail freight operators CD Cargo, CFL Cargo, DB Schenker Rail, Green Cargo, Rail Cargo Austria, SNCB Logistics and SBB Cargo. Xrail was founded in February 2010, with the objective of significantly enhancing the competitiveness of European wagonload traffic by collaboratively improving the quality of wagonload services throughout Europe, rendering wagonload traffic more reliable and customer-friendly.

4.5.1 Features

Xrail alliance members have implemented cross-border production standards, (Xrail standards), benefiting wagonload customers in the following areas:

Reliability

The target is to achieve a minimum of 90% punctuality in international wagonload traffic on single Xrail Origin-Destination (O/D) level, when compared with the estimated time of arrival (ETA) provided at the time of booking.

Transparency

The alliance members offer transparency before, during and after transport to its customers. Major events along the transport chain are measured by commonly defined and aligned key performance indicators (KPIs), which form the basis for monitoring progress of transports, as well as to continuously improve the transport quality at customer and railway undertaking level.

Improved response-time to market

Standard response time of three days maximum from a customer request, to the customer receiving their first quotation.

4.5.2 Evolution

In 2010 Xrail launched its central IT-tool which facilitated the new standards for international wagonload traffic (see above). Since then, customers are able to receive a time table on international basis from customer siding to customer siding for their Xrail transports, as well as to receive active information in case of any deviation from their predefined transport plan.

By the end of 2010, 10% of all wagon runs between the partners were powered by the agreed Xrail standards and features. The quality, according to Xrail definitions, reached 80% on a single Origin-Destination level. By continuous process and action improvements between the partners of the alliance, the quality and the scope of the alliance has been further enhanced. By the end of 2011, approximately 20% of all wagon runs between the alliance partners were managed according to the Xrail standards, reaching an average reliability of 83%. The target for 2013 is to reach a network coverage of about 30% and to further improve the reliability up to the target of minimum 90%.

[39] www.xrail.eu

4.5.3 Next steps

In order to reach the next level of development, as well as to achieve the target of providing Xrail standards on all wagon runs between the alliance members (network level), Xrail and its members are assessing the possibility of implementing capacity management at domestic and international level.

Capacity management on an international level will further facilitate members to enhance their operations and to provide supplementary benefits to their customers. The expected benefits of connecting the members' domestic capacity management systems, via an intelligent broker, will be essential for the survival of the wagonload sector. Each wagon run between alliance members will have a unique transport plan and the customer will be provided with a specific Estimated Time of Arrival (ETA) at the time of the booking, which will facilitate their supply chain management.

In addition, the alliance is also planning to extend its geographical coverage.

4.6 Towards noise reduction

Railways are a sustainable and climate friendly means of transport. Nonetheless, railways do influence the environment. The most important effect is noise, especially noise produced by freight trains. Both noise and vibrations have been therefore identified as major challenges for the European railway system with the sector constantly increasing its transport volume. Shifting more transport to rail and increasing the market share of the sector can only be achieved with sustainable noise and vibration mitigation measures. This affects, on the one hand, the infrastructure and, on the other hand, the rolling stock causing the vibration transmitted by the rail/wheel interaction.

4.6.1 Noise reduction: a challenge for the railways

The rail sector acknowledges noise as a problem and has put much effort into understanding noise creation and propagation and into finding solutions to the problem. As a consequence, significant progress has been made in noise abatement over the past 20 years. The systematic study and research of the issue has led to the introduction of new freight wagons with K-blocks, or the construction of noise barriers along major lines.

Composite brake blocks are seen as the best solution to reduce noise produced by rail freight. K-blocks are now fitted to all new wagons, while LL-blocks homologation for the retrofitting of existing wagons is currently in progress. Retrofitting is essential given the long lifespan of wagons. The testing period for LL-brake blocks included a special EuropeTrain which examined their effectiveness in extremes of hot and cold, and on varying gradients.

4.6.2 EuropeTrain Project

In September 2009, 24 railways and the organisations CER, EIM and UIC signed the joint resolution of the chairmen of the European rail operators on *EuropeTrain to speed up and improve LL-brake block testing in operations*, thus showing their clear will to support a successful development of LL-brake blocks as a means for cost-effective noise reduction at the source.

This broad support gave a very good basis to start the preparatory work on the EuropeTrain project. The project consisted of a train, with about 30 wagons, which ran throughout Europe only for the in-service testing of LL-brake blocks. The testing was designed to last at least one year, under all climatic conditions, with a minimum mileage of 200 000 km. All operational conditions relevant for Europe had to be covered, such as running on different gradients with different operational modes, arctic winter areas and high temperature zones.

The testing phase has come to an end. The final report from the project shows that LL-brake blocks are safe to use, but highlights differences with composite brake blocks, in terms of friction behaviour, especially at low speed and under winter conditions. Specific recommendations should therefore be applied when operating the brakes. The use of LL-brake blocks also increases the wheel wear rate, which will increase the frequency of wheel inspections. The current plan is that retrofitting could begin in 2014, provided that the funding issue can be solved.

4.7 Initiatives on trains' lengths

4.7.1 Increasing trains' lengths: benefits and downsides

In its proposal for the revision of the TEN-T Regulation, the European Commission specified the technical standards for rail infrastructure to be applied to the future comprehensive and core networks, and thereby to the future core network corridors. Some of the proposed specifications, including those for the train length, go beyond the current Technical Specifications for Interoperability for Infrastructure (INF TSI). Under the condition that the technical standards are more precisely defined, CER fully supports these technical specifications, as they will allow rail to increase its capacity and efficiency.

CER supports the approach that for lines which are used by conventional freight trains, the train length should be extended to 740 metres (plus an additional 10-metre safety margin) on upgrades and on new lines on the TEN-T network. CER believes that this should be extended to 1500 metres if feasible from an economical, operational and technical point of view. Wherever an increase of the train length to 1000 metres can lead to productivity gains, this should be encouraged as a positive first step.

Longer freight trains can generate important economic benefits for both infrastructure managers and railway undertakings. Increasing trains' lengths is considered to be the most cost effective infrastructure-related measure to increase capacity on the network. Longer trains allow for economies of scale with regard to the costs of track usage, for a more efficient use of human and material resources (train drivers, possibly traction units) and for increased transport capacity in areas of limited network capacity. Longer trains therefore have the potential to increase rail's competitiveness compared with other modes of transport for freight.

However, longer trains also require investments in infrastructure and rolling stock. The infrastructure needs to be upgraded to be compatible with longer trains, which is costly, while revenues from track usage could potentially decrease for infrastructure managers. For railway undertakings, the use of longer trains could result in the need to adapt operating principles, and could require investments in equipment of appropriate traction units.

However, the potential benefits for busy freight corridors are high, and have led to the launch of various initiatives with the aim of overcoming potential challenges.

SNCF Geodis operated its first 850-metre train in December 2011 on the rail motorway between Le Boulou (near the Spanish border) and Bettembourg (Luxembourg). 48 semi-trailers were loaded for a total weight of 2400 tons. 850-metre freight trains are also operated on the axis Valenton – Avignon and Perpignan – Noisy-le-Sec.

4.7.2 MARATHON: Example of an ongoing industry initiative to facilitate the use of longer trains

Various industry initiatives have been launched to seek to find solutions to overcome potential issues with longer trains. One of these is the EU co-funded project MARATHON.

MARATHON[40] - ***MA****ke* ***RA****il* ***T****he* ***HO****pe for protecting* ***N****ature* - is a collaborative R&D project co-financed by the European Commission in the 7th Framework Programme, which started in April 2011 and will last for 36 months. Its aim is to increase freight transport efficiency and competitiveness through the adaption of cutting edge technology solutions and the creation of a business model ready for implementation.

The 2011 Commission White Paper on transport has targeted a 30% shift from road freight to rail freight for journeys of more than 300 kilometres. To achieve this target, rail transport has to offer more to its potential customers. Therefore, MARATHON's objective is to improve the performance and appeal of rail freight services by the fast implementation of technologies, operations and business practices.

The project aims to reach its objectives by deploying longer, faster and heavier trains on the existing infrastructure, through the merging of two trains running in the same direction on a section of a route, with second train's locomotive in the middle of the newly formed train. That locomotive would then be operated via a state-of-the-art wireless radio solution connecting it to the lead locomotive. In addition to the development of a communication system, improved coupling and braking are required to enhance the dynamic properties of the train. Enhanced operation and traffic management is also a vital part of the project, as this will enable full exploitation of the potential of the developed solutions.

The longer, faster and heavier trains will provide extra capacity along with cost savings of up to 50% thus yielding a more efficient operation. The extra capacity obtained at considerably lower costs will deliver a better service and a more sustainable industrialised freight service.

[40] www.marathon-project.eu

4.8 Initiatives focusing on intermodal freight

4.8.1 Focus on a rail-road initiative: the Modalohr concept

Source: Modalhor, 2006

The Modalohr[41] concept is an innovative intermodal system launched in 2003 for trucks and trailers between France and Italy. Financed by France, Italy and users fees, it offers a viable alternative to the congested road network on the Trans-Alpine axis. The low-floor and articulated Modalohr wagon has its own loading ramp, which enables the quick, safe and economical trans-shipment of standard semi-trailers from road to rail. With this system, trains can be loaded or unloaded in as little as 15 minutes[42]. The development of a full network of 'rail motorway' across Western and Eastern Europe is ongoing and should be ready around 2015.

[41] www.modalohr.com

[42] http://youtu.be/SXOFDZ--WXI

4.8.2 CargoBeamer

CargoBeamer[43] is a logistics service provider offering an innovative system in intermodal transport. The company, set up in 2003, offers transport services for all semi-trailers on specifically designed wagons which can be loaded either in innovative automated terminals or by using conventional crane technology.

Source: CargoBeamer, 2012

CargoBeamer makes all semi-trailers compatible with crane handling with its wagons and wagon bases. This means that 70% of the trailers currently found on Europe's motorways can take part in Combined Transport.

Loading and unloading trains with the handling units takes place virtually silently in less than 15 minutes, as all wagons are loaded and unloaded in parallel and fully automated. CargoBeamer wagons also fit easily into other trains.

In addition to CargoBeamer's home terminal in Leipzig (Germany), the following terminals are currently in the implementation phases:

- Hagen (Germany);
- Calais (France);
- Legnica (Poland);
- Mockava (Lithuania).

[43] www.cargobeamer.com

4.9 Company initiatives

4.9.1 ČD Cargo, Czech Republic

In the Czech Republic, ČD Cargo has developed several initiatives to further improve the quality of its offers and to better meet its customers' requirements.

New information systems

ČD Cargo started a redesign of its production and business information systems in 2011 to support most of the TAF TSI requirements. The new comprehensive system will be completed by the end of 2013, in conformity with the updated company's TAF implementation plan.

The company expects significant improvement in quality and reliability of the overall processes. New functionalities will support all phases of transportation: as an example, the already existing electronic waybill service will be extended to international transports and made end-to-end from sender to consignee, making rail transportation easier and cheaper for customers. The new system will also offer improved possibilities of goods tracing and advance delivery notifications, thus providing safer linkage between consignments and wagons. A new capacity booking system will be launched to optimize the utilisation of technical and human resources, and to reduce peak demand for transportation, further improving the efficiency of the system.

Operational improvements

A new operational unit, the Department of Operational Analysis, has been set up to monitor and to further improve timetable implementation. The introduction of this new operational unit has allowed ČD Cargo to increase its productivity and reliability and to better serve its customers. Overall punctuality in freight transport is around 85%.

ČD Cargo Plus: a new product to reinforce rail freight's competitiveness

A new product named ČD Cargo Plus was introduced at the beginning of 2011, with the aim of increasing rail freight's competitiveness compared with road transport on small distances and lower volumes than block trains, with guaranted delivery time and prices. All paperwork can be filled electronically by customers, through a web portal[44]. In its first phase, this product is offered between only several stations in the Czech Republic (main cities and important railway junctions) and in the last mile road distribution (door-to-door system). In the near future, ČD Cargo expects to cooperate with the Czech state postal operator (Česká pošta) to deliver their parcels.

Currently, the products transported via the new ČD Cargo Plus service are mainly commodities which would otherwise be transported by road, such as confectionery from a factory in Olomouc (Central Moravia) to their distribution warehouse in Tuchoměřice near Prague (by using special insulated wagons) and packaged mineral water between stores in Obrnice (NW Bohemia) and Olomouc. Chemical materials (packaged polypropylene) are also transported from Obrnice to Olomouc via ČD Cargo Plus.

[44] https://app.cdcargo.cz/cdcplus

4.9.2 VR-Group, Finland

VR-Group Ltd, Finnish Railways has been active in railway telematics development since 1990, when its first EDI (Electronic Data Interchange) project was launched. Today 90% of all consignment notes in domestic traffic are received electronically from customers.

A special attention has always been paid to international transport between Finland and Russia. Today all waybills are exchanged electronically between VR (Finland) and RZD (Russia). Both parties also deliver third country waybills for transit goods. Electronic waybills contain all information related to the consignment, the invoice amount, contact information, etc. The consignment data sent by VR in EDIFACT format to RZD can be forwarded to the Russian customs system.

The natural step forward was paperless transport: in March 2011 VR and RZD started negotiations to run paperless. The first privately owned empty wagons ran paperless from Russia to Finland in July 2011, and this was extended to all empty wagons in December 2011. VR and RZD are prepared to start running paperless in loaded wagon transportation. Pilot customers and routes have been chosen and the process has been set out. The first pilot transports in wagon load from Russia to Finland will start in the second quarter of 2013.

With regard to customs formalities, VR was the first railway to receive the AEO (Authorized Economic Operator) status in Europe. Since 2011, Finnish customs authorities have received electronic notifications for all goods coming from 3rd countries. On the Russian side, VR and RZD have a joint border-crossing system developed by RZD.

The switch to electronic data exchange is beneficial to all stakeholders along the transportation chain: railway undertakings can better inform their customers and border-crossing formalities can be speeded-up, since all documents can be prepared, translated and transmitted in advance. This will reduce freight delivery times of railway services between Finland and Russia for freight forwarders, consignors and consignees within the Baltic Sea and Russia region.

Big efforts have also been made in tracking and tracing activities: in 2000, VR developed and started to produce a new service concept that attempts to streamline the international rail transport process, RailTrace. Consignment and status data from RZD are sent to the RailTrace core system. Each party on the logistic chain receives ‘discrete’ real time information as the consignment status is updated in RailTrace automatically by each partner’s own operational system. Tracking and tracing technologies improve the quality and reliability of the data and materials flow related to each consignment between Europe, Russia and CIS (Commonwealth of Independent States) countries.

4.9.3 Trenitalia Cargo, Italy

Source: Map data ©2013 GeoBasis-DE/BKG (©2009), Google, basado en BCN IGN España / Trenitalia Cargo, 2012

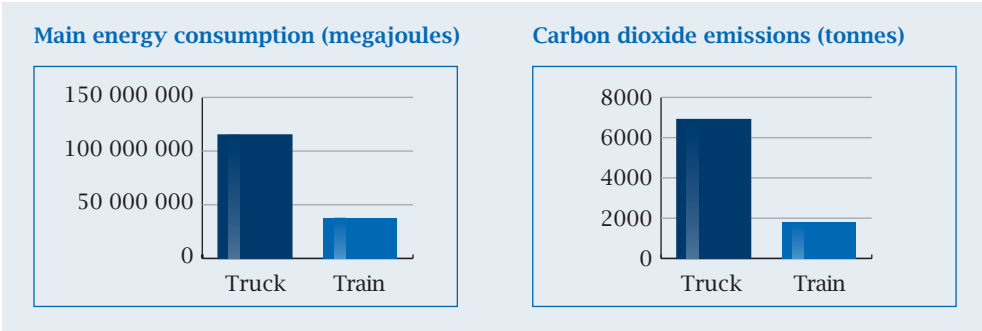
New and improved intermodal link between Rivalta Scrivia and Pomezia

The Rivalta Scrivia – Pomezia intermodal link has been operating since March 2012, adding a new destination to the new multimodal service that started on 7 March 2011 to guarantee a daily link between Rivalta Scrivia, the dry port of Genoa, and Rome, with an intermodal mixed train. This new service carried out by Trenitalia Cargo in close cooperation with Leroy Merlin Italia, Italia Logistica (Ferrovie and Poste Groups) and Rivalta Terminal Europa, was consolidated in May 2011, after a quick test. The train has a frequency of 5 couples a week, a total length of 440 metres, to take account of the maximum capacity of the Rivalta Scrivia Terminal.

This new service has a good punctuality performance and offers competitive economic conditions and service levels: it is therefore a valuable alternative to traditional solutions. The journey time between Rivalta Scrivia and Pomezia has recently been reduced by two hours, further improving the competitiveness of this service. Sticking to the new development model of this project the promoters have already planned the possibility to extend links towards all long- and medium-distance destinations, and priority is given to Campania, Puglia, Sicily and Triveneto.

In 2012, it is estimated that this service generated an environmental saving of more than 4000 tons of CO_2, as well as an energy saving of about 70 000 gigajoules, taking about 6500 trucks away from the road.

Figure 37 Comparison of energy consumption and CO_2 emissions of trucks and trains



Source: Trenitalia Cargo, 2012

New commercial platform

Trenitalia Cargo recently introduced a new commercial platform with a view to improve its customers' service, to offer better tracing facilities for all provided services, including after sales services, and to increase efficiency of its processes. The new commercial platform will be progressively extended to all Trenitalia cargo operations and will allow for an improved and more structured management of all end-to-end processes of cargo services. This new platform is being fully integrated with the systems supporting planning and production processes. This integration will make the entire system more user-friendly, and allow for quicker and more reliable exchange of information with customers.

Regardless of the communication channel used by customers (web, mail, phone, etc.), customers will have access to comprehensive and updated information about their cargo and measures adopted by Trenitalia Cargo to provide assistance or solve potential issues. Customers will also gain extra flexibility and a better control of many features, with the possibility to ask for re-planning of services or new services, for instance. Any changes requested by customers via this platform are directly transmitted to planning and operational units of Trenitalia Cargo. Transport documents will be drawn up and delivered with a fully digital and certified modality, allowing for important efficiency and time gains.

4.9.4 DB Schenker Rail, Germany

DB Schenker Rail launched a new weekly report on production quality in January 2012. The report provides a weekly measurement of quality along the chain, with detailed information about the source of potential delays and the situation along all steps of the production process – service design, resource planning, operations and maintenance – for both the company's headquarters and its regional divisions. The quality performance for each step of the production process is measured by individual key performance indicators, for maximum transparency.

The report is the main instrument used by DB Schenker Rail's to improve the quality of the DB products, in close cooperation with all DB regional divisions. It is used by production top management and quality management divisions across the organisation as part of DB Schenker Rail's quality management strategy, to assess and improve the situation in a coordinated manner.

The main data base for this report is provided by the Quality Measurement System (QMS). The system provides punctuality figures for departure and arrival of different train planning classes. These figures can be broken down by customer industry and region and are usually reported in two categories: punctuality within 15 minutes and punctuality within 60 minutes. The latter is mainly applied to international transports. Subcategories for punctuality can be provided for different market segments. Furthermore, the report provides information on the causes for delays, lists special incidents, gives an overview of ongoing construction measures and the trains affected thereby. In addition, key performance indicators for resource productivity are included for locomotives, drivers and wagons – to list only the most important items.

The punctuality figures currently provided by the QMS still apply the traditional approach of measuring arrival punctuality at the last production site before the customer's private siding. However, the QMS is scheduled to be fully operational by the end of 2013 (test runs scheduled to begin this summer); it will be able to deliver the actual punctuality of the train arrival at the customer's siding. This information presents a significant breakthrough for the rail freight industry and provides an important precondition for further quality improvement by delivering more detailed data about punctuality than ever before.

Policy recommendations

5

Many external factors influence the development of rail freight quality and competitiveness, such as the availability of infrastructure, legislation and regulatory requirements. Policy measures adopted during the last decade have only had limited effects on rail freight's competitiveness and the modal shift towards rail, as shown in chapter 2. This is due to a number of factors that have not sufficiently been addressed by policy makers so far, such as the availability of infrastructure. Crucially, all modes are not on a level-playing field at present, which further damages the competitiveness of rail freight, and particularly affects specific categories such as single wagonloads which, as a consequence, are in need of specific support. Technical and administrative bottlenecks also need to be removed. Chapter 5 provides an overview of external factors influencing the development of rail freight quality and competitiveness. It contains recommendations to ensure that rail truly becomes the backbone of the European transport system and that targets of the the European Commission's 2011 White Paper are met.

5.1 Availability of infrastructure

Availability and quality of rail infrastructure is an essential parameter of rail freight's quality and competitiveness, as shown in section 1.6.1. However, investments in rail infrastructure have been much lower than investments in road infrastructure during the last decade, and the situation is worsening, as shown in section 1.6.2.

This section presents positive ongoing solutions introduced by policy makers and argue that more efforts are needed to guarantee a sufficient level of availability and quality of rail infrastructure to realise the 2011 Transport White Paper objectives.

5.1.1 Solutions are on the way…

Freight corridors

We saw in section 1.5.2 that Regulation EC 913/2010 on a European rail network for competitive freight had been introduced with the objective to improve the conditions for international rail freight by reinforcing cooperation at all levels along selected rail freight corridors.

According to the Regulation, no less than nine initial corridors must be established in the next few years: six by November 2013 and three by November 2015 (see Figure 38). Moreover, each member state with a rail link to another member state will have to establish at least one corridor.

Figure 38 List of rail freight corridors to be established initially, as in the annex to Regulation 913/2010

	Member states	Principal routes[45]	Establishment of freight corridors
1.	NL, BE, DE, IT	Zeebrugge-Antwerp/Rotterdam-Duisburg-[Basel]-Milan-Genoa	By 10 November 2013
2.	NL, BE, LU, FR	Rotterdam-Antwerp-Luxembourg-Metz-Dijon-Lyon/[Basel]	By 10 November 2013
3.	SE, DK, DE, AT, IT	Stockholm-Malmö-Copenhagen-Hamburg-Innsbruck-Verona-Palermo	By 10 November 2015
4.	PT, ES, FR	Sines-Lisbon/Leixões – Madrid-Medina del Campo/Bilbao/San Sebastian-Irun-Bordeaux-Paris/Le Havre/Metz Sines-Elvas/Algeciras	By 10 November 2013
5.	PL, CZ, SK, AT, IT, SI	Gdynia-Katowice-Ostrava/Žilina-Bratislava/Vienna/Klagenfurt-Udine-Venice/Trieste/Bologna/Ravenna/Graz-Maribor-Ljubljana-Koper/Trieste	By 10 November 2015
6.	ES, FR, IT, SI, HU	Almería-Valencia/Madrid-Zaragoza/Barcelona-Marseille-Lyon-Turin-Milan-Verona-Padua/Venice-Trieste/Koper-Ljubljana-Budapest-Zahony (Hungarian-Ukrainian border)	By 10 November 2013
7.	CZ, AT, SK, HU, RO, BG, EL	– Bucharest-Constanta Prague-Vienna/Bratislava-Budapest – Vidin-Sofia-Thessaloniki-Athens	By 10 November 2013
8.	DE, NL, BE, PL, LT	Bremerhaven/Rotterdam/Antwerp-Aachen/Berlin-Warsaw-Terespol (Poland-Belarus border)/Kaunas	By 10 November 2015
9.	CZ, SK	Prague-Horní Lideč-Žilina-Košice-Čierna nad Tisou (Slovak/Ukrainian border)	By 10 November 2013

The Regulation also defines the corridor's governance structure and sets the basis for the following:

- An Executive Board of the member states concerned, to make the main decisions affecting the corridor (notably concerning investment plans);
- A Management Board of infrastructure managers, to prepare the decisions of the member states and to execute these decisions;
- Two Advisory Groups: one comprising railway undertakings using or likely to use the corridor, and one made up of terminal's owners and managers.

The Management Board's responsibility is to design or to respectively set up the corridor's one-stop shop (OSS). The role of an OSS is to process applications for international pre-arranged freight train paths as well as reserved capacity for ad-hoc freight train paths requests.

When it comes to traffic management, a specific objective of Regulation EC 913/2010 is to ensure that sufficient priority is given to freight trains aiming to achieve the punctuality targets set by the Management Boards of the corridors and ensuring that freight trains which are 'on time' can keep their path even in case of traffic disturbances.

[45] '/' means alternative routes. In line with the TEN-T priority projects, routes 4 and 6 should in the future be completed by Project 16, the Sines/Algeciras-Madrid-Paris freight axis which takes in the central Pyrenees crossing via a low elevation tunnel.

Although member states are responsible for establishing rail freight corridors, CER infrastructure managers have often taken the lead in initiating the set-up of corridors. RailNetEurope (RNE), an association set up by a majority of European rail infrastructure managers and allocation bodies, is taking a forerunner's role in providing tools to help the work of the future one-stop shops.

Regulation 913/2010 leaves relatively little space for railway undertakings to influence corridor developments. The European rail freight CEOs gathering in Brussels on 19 May 2011 therefore decided to make the voice of the market heard by member states and infrastructure managers. Four railway undertakings (BLS Cargo, DB Schenker, SBB Cargo and TX Logistik) operating on the Rotterdam-Genoa corridor drew up a list of requirements relating to infrastructure bottlenecks, interoperability, operational practices and administrative procedures. The list was presented in Berlin in December 2011.

Presentation of the list of requirements of BLS Cargo, DB Schenker, SBB Cargo and TX Logistik, in December 2011

▸ *From left: Dirk Stahl (CEO, BLS Cargo), Karl Michael Mohnsen (CEO, TX Logistik), Johannes Ludewig (former CER Executive Director), Nicolas Perrin (CEO, SBB Cargo), Alexander Hedderich (CEO, DB Schenker Rail)*

Source: CER, 2011

Following this initiative, European rail freight companies have developed a core of common requirements of the operators towards infrastructure managers and member states, valid across all corridors. These requirements were adopted by the European rail freight CEOs at their annual meeting in Brussels on 18 April 2012. They include proposals in terms of capacity increase through the removal of bottlenecks, harmonisation of operational rules, transnational planning of train paths and interoperability enhancements. As a follow-up, CER is currently being invited to take part in most corridors' Railway Advisory Groups, where it can act as a catalyser for cross-fertilisation and harmonisation between corridors.

In general, CER advocates the full implementation of the regulation and insists on setting-up the corridors within the timeframe of the regulation, in order to allow them to fulfill their initial goal and to facilitate international freight transport within Europe. High-level political involvement will be key to respect the deadlines and to secure investments.

Figure 39 The European rail network for competitive freight

Source: European Commission, *Handbook on the Regulation concerning a European rail network for competitive freight*, June 2011

TEN-T

Since the 1980s, the Trans-European Transport Networks Policy, designed to put in place the transport infrastructure and interconnections that underpin the Single Market, has focused EU money on supporting the development of key European infrastructure projects.

In October 2011, the European Commission issued a proposal for a revision of the TEN-T guidelines, aiming to focus spending on a smaller number of projects where real EU added value can be realised. The TEN-T network consists of two layers: a core network to be completed by 2030 and a comprehensive network feeding into this, to be completed by 2050. The comprehensive network, will ensure full coverage of the EU and accessibility of all regions, while the core network will prioritize the most important links and nodes of the TEN-T. The TEN-T guidelines set common requirements for the TEN-T infrastructure, with tougher technical requirements for the core network, to ensure fluent transport operations throughout the network.

The Commission expressed a commitment to co-finance parts of the future TEN-T core network through the introduction of the financial instrument Connecting Europe Facility (CEF). According to the Council Conclusions from 7 and 8 February 2013 on the Multiannual Financial Framework 2014-2020, the TEN-T network shall be funded with €23.1 billion[46] under this new facility, which will include €10 billion from the Cohesion Fund to be ring-fenced for transport projects and managed centrally by the CEF. The other part of the co-financing will come from member states, regional authorities and private investors. This budget proposal and co-funding approach will help provide financing for transport infrastructure where it is most needed: for the removal of bottlenecks, the construction of missing links, reducing rail freight noise and for inland connections to ports and airports.

[46] In its original proposal, the Commission had proposed to allocate €31.7 billion to transport under the CEF (€21.7 billion from CEF transport budget and €10 billion from the Cohesion Fund for transport infrastructure)

5.1.2 … but more is needed

EU funding

The under-financing of rail infrastructure over the past decades, especially in Central and Eastern Europe, has become one of the main problems in Europe's transport policy today. This has had dramatic consequences on the performance and quality of rail services, as demonstrated in section 1.6. Providing adequate funding for rail infrastructures is therefore essential to ensure that rail remains competitive and offers services of a good quality compared with other modes. While the Connecting Europe Facility will certainly help in this respect, by co-funding the development of the TEN-T network, more efforts are needed in particularly vulnerable countries where national investments in rail infrastructure are insufficient and decreasing. Further investments will also be needed for feeder lines into the main freight corridors.

Investing in infrastructure for sustainable modes of transport, such as rail, should therefore be a priority for the next generation of structural funds. Whereas supporting the shift towards a low-carbon economy in all sectors is indeed among the spending priorities defined in the Commission proposal for the next generation of structural funds (2014-2020), transport does not seem to be included within this thematic priority[47]. In addition, the Commission proposal prevents the European Regional Development Fund (ERDF) from supporting investment in transport infrastructure in regions that are more dynamic economically. This could be a missed opportunity for Europe, given the importance of structural funds in the EU budget and the funding potential for rail infrastructure.

Recommendation 1:
Provide EU co-funding to top up funds from national and regional authorities for the building and maintenance of rail infrastructure, via structural funds and the CEF - Connecting Europe Facility.

Multi-annual contracts between governments and infrastructure managers

Multi-annual contracts between governments and infrastructure managers improve the predictability, the efficiency and the transparency of the use of funds for the construction, maintenance and renewal of infrastructure. In this type of contract, governments commit to pay a certain sum to the infrastructure manager each year for investments in infrastructure, in return for which the infrastructure manager commits to a series of quality and efficiency obligations. They force both parties to take a long-time view and develop maintenance plans on the basis of future demand and the infrastructure manager's business plan. They are also a tool for better cost control and reduced unit costs, since long-term planning allows for better adaptation of equipment and staff, and the drawbacks of annual budgets can be avoided.

Specific recommendations for intermodal freight and single wagonload freight will be made in sections 5.4 and 5.5.

Recommendation 2:
Ensure adequate and reliable public funding for rail infrastructure, including upgrade activities, preferably through multi-annual contracts.

[47] Transport spending seems rather to fall under a different and specific objective which goes as 'promoting sustainable transport and removing bottlenecks in key network infrastructure'

5.2 Conditions to put all transport modes on a level-playing field

A level playing field between transport modes is an essential pre-requisite to modal shift. Although minor improvements have taken place to ensure that lorries pay the real cost of their activities through the revision of the Eurovignette Directive, more efforts are needed to ensure that all transport modes can operate in fair conditions.

5.2.1 Infrastructure charges

Rail freight transport generates the lowest specific CO_2 emissions and is the most energy-efficient mode compared with road freight, air freight and even waterborne freight transport, as seen in section 1.3. However, rail transport still suffers from a charging regime which is not only disregarding its environmental performance, but is discriminating against rail, vis-à-vis other modes of transport.

Despite some progress made at national level, the EU is still struggling to implement a fair infrastructure charging policy across all transport modes. Yet evidence shows that, in countries where the competitive imbalance between rail and road has been reduced, quality improvements and freight growth have been achieved. In those countries where rail freight is performing best, imbalances between road and rail have been lowered in various ways. In many cases, these solutions were not primarily intended to re-establish the right balance between modes, but they turned out to produce similar effects:

- **United Kingdom:** dramatic increase of governmental support to rail infrastructure management since 2001, leading to a more efficient use of infrastructure;
- **Denmark, Netherlands, Sweden:** lowest infrastructure charges in Europe, freeing resources for operators to focus on quality and growth;
- **Germany, Austria, Czech Republic:** introduction of road tolls;
- **Switzerland:** introduction of road tolls, charging of the full external costs for road freight, and continuous investment in rail infrastructure.

Adequate investment in rail infrastructure is essential to ensure that rail freight becomes more competitive and is of better quality. Aside from direct appropriate funding for rail infrastructure, member states should also ensure that funds collected through road tolls are earmarked (at least partially) for the development of environmentally friendly transport solutions, with a specific focus on rail.

Recommendation 3:
Ensure alignment between road and rail infrastructure charges for freight.

Recommendation 4:
Ensure that funds collected through the road tolls are spent (at least partially) on the development of environmentally friendly transport alternatives.

5.2.2 Internalisation of external costs

Section 1.3.2 presented the concept of external costs, which are generated by transport activities, but are generally borne by society rather than transport users. A study[48] conducted by CE Delft et al. in 2011 estimated the total external costs generated by the transport sector in 2008 for EU-27 at €660-760 billion, depending on whether low or high congestion values are used.

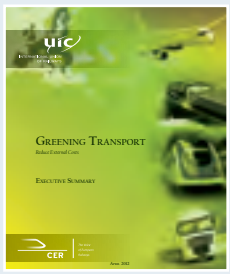
However, current transport prices do not reflect the true cost of transport, since a large part of this cost is covered by society rather than freight users. Competition between modes is therefore distorted. This has dramatic consequences on modal preferences in freight, given the fact that price is nowadays the most important factor for freight customers (see section 1.2).

If we want 'real prices' in transport that incentivize the best choice of mode of transport for sustainable mobility, we need to pursue internalisation:

- In each mode of transport, and at the same time;
- For all external effects, with the same definition in each case;
- Set at the 'right', scientifically-based level and not at the minimum level necessary for political acceptance.

Revenues generated from internalising external costs can be used to further mitigate the negative impact of transport, through such measures as investing in more sustainable modes.

The study *External costs of transport in Europe*, as well as a summary produced by CER and UIC in June 2012, can be found on the CER website (www.cer.be).



Recommendation 5:
Fully internalise the external costs of transport, by applying the 'polluter pays' principle. Make the current voluntary provisions of the Eurovignette Directive mandatory at national level, charging lorries for the cost of air pollution and noise they generate. Expand this to ensure that additional costs including accidents, CO_2 and congestion are covered.

5.2.3 Social conditions

Putting an end to unfair competition between modes based on differences in social rules and tax regimes is another pre-requisite to put all transport modes on a level-playing field. This unfair competition is a major obstacle to significant modal shift.

As guided transport, working hours of mobile railway workers are necessarily respected. This is not the case for their competitors of the road transport sector. A new European legislation

[48] CE Delft, INFRAS, Fraunhofer ISI, *External costs of Transport in Europe: Update study 2008*, November 2011

on working time agreed in 2006 improved driving conditions for lorry drivers. Despite an increased number of checks on European trucks, the law failed to be properly enforced.

Another problem is the implementation and enforcement of local labour rules in cases falling within the scope of Directive 96/71/EC on posting of workers. Practices have been developed to deliberately circumvent the rules and to employ drivers from countries with a lower level of average income at rates in line with those in their home countries and not those of the country in which they work. These drivers may be employed on a quasi-permanent basis, risking a race towards the bottom in social standards. European trade unions complain about these abuses.

Recommendation 6:
Reinforce the control of social rules in road transport.
Harmonise social rules and tax regimes across modes.

5.2.4 Spatial planning and sustainable freight

An integrated approach to urban and special planning is essential to the emergence of a sustainable transport network, not only for the transport of passengers, but also for the transport of goods. Urban areas should provide efficient interconnection points for the trans-European transport network and offer efficient 'last mile' transport for freight.

General framework conditions should be adopted at EU level for the development and implementation of specific planning policies at local level. The Commission should encourage the inclusion of sustainable transport in special, urban and industrial planning and policies. At local and regional level, industries should be encouraged to establish themselves in areas well connected to the rail network.

Recommendation 7:
Include sustainable urban freight in spatial, urban and industrial planning.

5.3 Remove technical and administrative bottlenecks

Aside from appropriate levels of investment in rail infrastructure and conditions to ensure a level-playing field across modes, measures to remove technical and administrative bottlenecks would be essential to increase rail freight's quality and competitiveness. Appropriate funding for applied research and demonstration activities, regulatory measures aimed at ensuring harmonisation of requirements across Europe, and measures to simplify customs procedures are all part of the solution.

5.3.1 Removing technical and administrative barriers by strengthening the role of ERA

Technical bottlenecks hampering the development and competitiveness of rail freight are still a reality, and need to be removed in order to achieve a Single European Railway Area. Harmonised technical requirements providing full interoperability across Europe is crucial to ensure the deployment of a safe, interoperable, sustainable, cost-efficient and reliable railway system with all its subsystems included.

The establishment of a single European railway vehicle authorisation process is a strategic step towards the removal of administrative barriers. In the current system, there are still major delays with respect to the authorisation of vehicles, and measures are therefore needed in order to provide full harmonisation of technical requirements and reduce administrative burden. The Commission's proposal for a Fourth Railway Package aims at giving more power to the European Railway Agency (ERA) by allowing ERA to act as a one-stop shop for applicants seeking certificates and authorisations. ERA will also accelerate its efforts to reduce the vast number of 11 000 national rules that have to be applied for authorisation in the EU member states in addition to the common European specifications (Technical Specifications for Interoperability).

Recommendation 8:

Achieve a single European Railway Area through the harmonisation of technical requirements across Europe and by establishing the European Railway Agency as the single issuing authority for certification and authorisation to place vehicles on market.

5.3.2 Research to improve rail freight's performance

The future challenge for rail freight is to ensure adequate freight capacity provision on the European rail network. This requires a better use of existing infrastructure, with measures to deliver substantial productivity enhancements, reflecting the principles underlying the European Commission's 2011 White Paper on Transport.

To this end, public co-funding for the development of technologies to increase the attractiveness of rail freight is needed. On top of the development of dedicated rail freight corridors, the European Rail Research Advisory Council (ERRAC) identified the following priority elements for which co-funding of research would be beneficial:

- Technical solutions for wagons and train sets, with a view to developing a modern wagon fleet adapted to business needs. Innovative, faster, and more flexible freight trains performing like passenger trains and able to address new market segments (lighter and more valuable goods, currently transported by road);
- Logistics and technical solutions to increase the efficiency and facilitate the use of multimodal solutions and to support the development of efficient supply chains that are more flexible in responding to customer demands;
- IT solutions, for intelligent traffic management (to enhance reliability and punctuality), fleet management, safety and security.

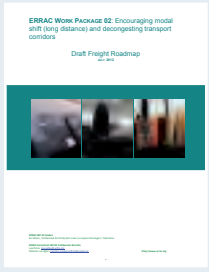
These key targets should be reflected in the priorities of Horizon 2020.

Recommendation 9:

Foster and co-fund with EU research funds the development of technologies to increase the attractiveness of rail freight, by improving door-to-door transport time, security and traceability.

The European Rail Research Advisory Council (ERRAC) is an advisory body to the European Commission representing member states and all stakeholders in the rail sector ranging from operators and infrastructure managers to manufacturers, freight customers, passengers and academics.

The Strategic Rail Research Agenda 2020 (SRRA) developed by ERRAC identifies key research objectives to ensure that rail remains at the heart of Europe's transport system over the next decade. These objectives were translated into concrete milestones with the adoption of specific research roadmaps. One of these roadmaps focuses on freight transport, with a view to encouraging modal shift, particularly for long-distance transport, and decongesting transport corridors. The document can be found on the ERRAC website (www.errac.org).



5.3.3 Customs

A reshuffle of the customs policies is currently ongoing. One of the issues facing rail freight companies is the fact that the European Commission does not support a further expansion of the current simplified rail (customs) transit procedure. Together with several member states, the Commission is considering a phasing out of the Simplified Rail Transit Procedure, with a switch to the regular customs transit procedure (NCTS) by 1 January 2015.

The rail sector is faced with an uncertainty concerning the date of application of the Implementing Provisions of the Union Customs Code (UCC) related to the inevitable IT systems. As long as their IT systems are not ready, railway undertakings are not in a position to test and to prepare for NCTS and the related investments and organisational changes. Moreover there is no clarity on the data to insert under NCTS; the aim is to find a proper fit between the common consignment note-based data and the required NCTS declaration data. These two issues have to be tackled by the European Commission before any NCTS implementation can be envisaged. Railway undertakings cannot plan investments and duly justify them towards their shareholders (often public authorities) before these issues have properly been addressed and clear solutions have been commonly agreed by all customs authorities.

However, it should be noted that as part of the latest institutional discussions around the reshuffle of EU customs policy, a new option is being envisaged whereby electronic transport documents could be used by rail operators as customs transit declarations.

Besides the application of this new option, it is still necessary to maintain the right to apply the current simplified transit procedure, as a minimum as a transitory measure, until the Union Customs Code enters into force, or at least until all IT systems are ready.

Moreover, as usually done in air and sea transport, it would be a practical and suitable option for railway undertakings to allow the electronic consignment note data – grounded on e-Rail Freight or similar systems – to be considered as a transit declaration. This would limit and reduce the required investments, and would also help avoid a distortion of competition between rail and other transport modes.

Recommendation 10:

Maintain existing dedicated simplified rail transit procedures as long as possible, preferably up to the entry into force of the Union Customs Code, or at least until all IT systems required on the basis of the Union Customs Code are available. A dedicated rail IT-based transit application would be desirable, allowing for declarations based on the available rail data (e.g. consignment note), and aligned with railways' production and logistic settlements.

5.4 Specific challenges for single wagonloads

Single wagons present key advantages compared with block trains:

- The ability for clients to transport lower volumes;
- Flexibility regarding quantities and booking process for clients;
- Adaptation to complex logistics chains;
- Support of the full train-load model.

They also present strong advantages compared with trucks:

- High level of safety;
- Much lower environmental impact [49];
- Positive impact on road congestion.

In spite of his strengths, the single wagonload model in Europe is currently under very high pressure, due to intense competition from road transport, partly linked to economic and structural factors, as seen in section 2.3.1.

As we saw in section 4.5, industry initiatives are under way with a view to rejuvenating the single wagonload offer. These initiatives should be complemented by appropriate policy measures at European and national/local levels.

Recommendation 11:
Facilitate the setup of strategic alliances among single wagonload operators by making sure that competition rules allow the creation of such alliances.

Recommendation 12:
Allow and encourage national programmes to support the development and maintenance of rail connections to the main rail network on industrial sites (the so-called 'private sidings').
Maintain freight stations, feeder lines and private sidings and set up national programmes to support the development and maintenance of private sidings, following the examples of Germany, Austria, Switzerland and the UK, which co-finance the rail connections of industrial sites to the main rail network.

Recommendation 13:
Ban cross-border traffic of megatrucks which have a negative effect on single wagonload and intermodal traffic.

[49] Fraunhofer ISI & K+P, *Study on the effects of the introduction of LHVs on combined road-rail transport and single wagonload rail freight traffic,* October 2011

5.5 Specific challenges for intermodal freight

Intermodality is a valuable solution to pressing challenges such as congestion from ports and roads, or the need to reduce freight's environmental footprint. Shifting to intermodal solutions with a strong rail component would present the following advantages:

- To reduce ports' congestion by providing efficient links between ports and hinterland terminals;
- To help reduce roads' congestion and take long-distance trucks off city centres;
- To reduce the burden of transport's external costs on society (see section 5.2.2 for more details);
- To reduce CO_2 emissions and transport's negative impact on climate change.

Some rail sector's initiatives are underway with a view to strengthening the role of rail in intermodal freight solutions, examples of which can be found in section 4.8. However, specific policy measures are also needed to facilitate the development of intermodal freight and to strengthen the role of rail in intermodal solutions:

- Rail freight's links to seaports need to be reinforced;
- The cost of trans-loading activities need to be partly covered by public funding;
- Masses and dimensions always need to respect the needs of combined transport;
- Existing e-freight solutions that can already be used across modes need to be supported.

These recommendations are outlined in the box below.

Recommendation 14:
Provide public funding to cover part of the costs of trans-loading activities, following the UK and French examples.
Set up mechanisms to attract private investment in heavy-loaded traffic infrastructure (such as rail freight links to seaports).

Recommendation 15:
Set up proper connections between rail-road/inland waterway terminals and rail corridors.

Recommendation 16:
Harmonise technical requirements between modes, to ensure cross-modal compatibility. Limit changes in masses and dimensions of road vehicles and trailers which would hinder combined transport and the use of rolling highways, and restrict the use of road vehicles and trailers which are not compatible with intermodal freight given their size and dimension.

Recommendation 17:
Support the use of the CIM consignment note across modes.

Conclusions

The European Commission's 2011 Transport White Paper set clear objectives in terms of competitiveness, efficiency and sustainability of the transport sector, which will only be reached by making greater use of more energy-efficient modes and implementing the right framework for a modal shift. After a decade of policy measures aimed at creating a more efficient railway sector and revitalizing rail freight, it is important to assess the extent to which the initial vision set out in the 2001 Transport White Paper, and reiterated in the 2011 Transport White Paper, has been realised.

Here, the facts speak for themselves: all in all, progress towards the initial policy objectives set out a decade ago, and reaffirmed in 2011, is rather limited and disappointing. During the last years, visible progress has only taken place in the intra-modal competition, with an ever increasing share of national freight markets going to new entrants.

However, the modal shift which should have started several years ago is going in the wrong direction: while road freight operators are increasing their share of land freight transport, year after year, the modal share of rail is decreasing (from 18.5% in 2000 to 16.2% in 2010). Specific services, such as single wagonload, on which a number of industries rely deeply, are particularly suffering, and risk disappearing in several parts of Europe. Combined transport, which should be encouraged to help take the trucks off the roads, is put under threat with the emergence of vehicles with sizes and dimensions that are not compatible with rail. The risk is not only to waste the huge potential that a shift to rail could bring to Europe, in terms of energy efficiency and environmental savings, but to fail to create a truly efficient and sustainable transport system.

This shows quite clearly that structural changes alone are not sufficient to revitalise rail freight. Other framework conditions need to be established in parallel, in order to create a real change in the right direction. In this respect, it is important to recall that, back in 2001, the Commission's Transport White Paper rightly listed a number of accompanying conditions to **market opening** for a sound rail development:

- **Financing**, notably with regard to infrastructure investments (in order to guarantee the availability of a sufficient, well-connected and well maintained rail infrastructure network), cancellation of historic debt, proper compensation for public service contracts for passenger services;
- **Fair competition between modes:** i.e. establishing a framework in which all transport modes can compete on a level playing field, notably via a consistent and fair charging and taxation system across all modes (taking into account both internal and external costs).

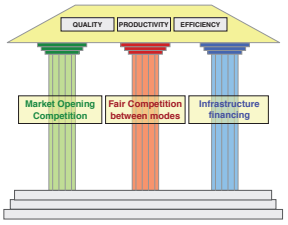
In many cases, there has been a lack of appropriate political action and financing over the last 10 years. While market opening has been addressed by European regulation, the other requirements of the 2001 Transport White Paper have only partly been followed by sufficiently binding legislation.

Very limited efforts have been made at European level with regard to the first condition (financing) with only €8 billion dedicated to TEN-T over the period 2007-2013. More efforts are needed, not only with regard to TEN-T funding, but also through a better use of structural EU funds. Above all, national investments into rail infrastructure need to be dramatically stepped up, particularly in Central and Eastern Europe.

Measures introduced to create a level playing field between transport modes (second condition) have also been far too limited in scope and ambition. Inequalities in infrastructure charges between road and rail are still a reality and seriously hamper the competitiveness of rail freight. Likewise, full internalisation of external costs is far from being a reality: the current system creates market distortion and forces society as a whole to pay the price for pollution, congestion, and inefficient use of energy resources.

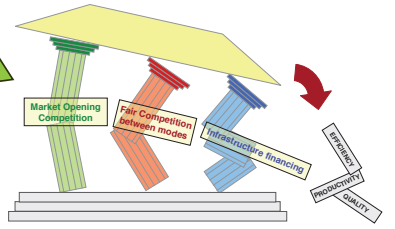
The original architecture of European transport and rail policy

In the 2001 Transport White Paper, the European railway policy rested on 3 'pillars'



Ten years on: the weak points of current European transport policy

One 'almost' straight 'pillar' and two neglected 'pillars' !



The need to remove technical and administrative bottlenecks should not be forgotten. Appropriate funding for applied research and demonstration activities, regulatory measures aimed at ensuring harmonisation of requirements across Europe, and measures to simplify customs procedures are indeed all part of the solution.

CER therefore calls upon European decision makers to implement as a matter of urgency the following three conditions which are absolute pre-requisites to a modal shift towards rail:

- Sufficient investment into infrastructure, to guaranty the availability of a well-connected and well-maintained infrastructure network for rail;
- A framework in which all transport modes can compete on a level-playing field;
- Measures to remove technical and administrative bottlenecks.

Railways have demonstrated that they are ready to play their part, through the number of positive initiatives and projects launched at sector or company level throughout Europe, and they will continue to do so in order to improve their quality, productivity and efficiency. However, these efforts will fail if they are not complemented by the three essential framework conditions identified above and listed in Chapter 5. These framework conditions should be at the core of the EU strategy in the field of transport. CER and its members are ready to support political decision makers to this end. There is not time to waste if Europe wants to have a chance to get closer to its objective of a sustainable and efficient transport sector.

List of recommendations

1: EU funding – p. 75

Provide EU co-funding to top up funds from national and regional authorities for the building and maintenance of rail infrastructure, via Structural Funds and the CEF – Connecting Europe Facility.

2: Multi-annual contracts between governments and infrastructure managers – p. 75

Ensure adequate and reliable public funding for rail infrastructure, including for upgrade activities, preferably through multi-annual contracts.

3: Infrastructure charges – p. 76

Ensure alignment between road and rail infrastructure charges for freight.

4: Infrastructure charges – p. 76

Ensure that funds collected through road tolls are spent (at least partially) on the development of environmentally friendly-transport alternatives.

5: Internalisation of external costs – p. 77

Fully internalise the external costs of transport, by applying the 'polluter pays' principle. Make the current voluntary provisions of the Eurovignette Directive mandatory at national level, charging lorries for the cost of air pollution and noise they generate. Expand this to ensure that additional costs including accidents, CO_2 and congestion are covered.

6: Social conditions – p. 78

Reinforce the control of social rules in road transport.
Harmonise social rules and tax regimes across modes.

7: Spatial planning and sustainable freight – p. 78

Include sustainable urban freight in spatial, urban and industrial planning.

8: Removing technical and administrative barriers by strengthening the role of ERA – p. 79

Achieve a single European Railway Area through the harmonisation of technical requirements across Europe, and by establishing the European Railway Agency as the single issuing authority for certification and authorisation to place vehicles on market.

9: Research to improve rail freight's performance – p. 80

Foster and co-fund with EU research funds the development of technologies to increase the attractiveness of rail freight, by improving door-to-door transport time, security and traceability.

10: Customs – p. 81

Maintain existing dedicated simplified rail transit procedures as long as possible, preferably up to the entry into force of the Union Customs Code, or at least until all IT systems required on the basis of the Union Customs Code are available. A dedicated rail IT-based transit application would be desirable, allowing for declarations based on the available rail data (e.g. consignment note), and aligned with railways' production and logistic settlements.

11: Specific challenges for single wagonload – p. 82

Facilitate the setup of strategic alliances among single wagonload operators by making sure that competition rules allow the creation of such alliances.

12: Specific challenges for single wagonload – p. 82

Allow and encourage national programmes to support the development and maintenance of rail connections to the main rail network on industrial sites (the so-called 'private sidings').
Maintain freight stations, feeder lines and private sidings and set up national programmes to support the development and maintenance of private sidings, following the examples of Germany, Austria, Switzerland and the UK, which co-finance the rail connections of industrial sites to the main rail network.

13: Specific challenges for single wagonload – p. 82

Ban cross-border traffic of megatrucks which have a negative effect on single wagonload and intermodal traffic.

14: Specific challenges for intermodal freight – p. 83

Provide public funding to cover part of the costs of trans-loading activities, following the UK and French examples. Set up mechanisms to attract private investment in heavy-loaded traffic infrastructure (such as rail freight links to seaports).

15: Specific challenges for intermodal freight – p. 83

Set up proper connections between rail-road/inland waterway terminals and rail corridors.

16: Specific challenges for intermodal freight – p. 83

Harmonise technical requirements between modes, to ensure cross-modal compatibility.
Limit changes in masses and dimensions of road vehicles and trailers which would hinder combined transport and the use of rolling highways, and restrict the use of road vehicles and trailers which are not compatible with intermodal freight given their size and dimension.

17: Specific challenges for intermodal freight – p. 83

Support the use of the CIM consignment note across modes.

ANNEX I

CER/UIC/CIT Freight Quality Charter

(Adopted on 4 July 2003 in Rome)

This Rail Freight Charter sets out a voluntary commitment by the European Railway Undertakings on the service quality offered to their Freight Customers. This initiative is intended to meet the requirements of the market and support business development.

By subscribing to this Charter, European Railway Undertakings demonstrate commitment to the customer to provide and further develop attractive rail services, respecting contractual quality provisions. The charter covers areas relevant to the stages of freight transport.

The Railways undertake to work out all the necessary international measuring methods to ensure that the commitment contained in this Charter is implemented and respected. To this end they commit to introduce the appropriate arrangements in agreement with customer need.

THE COMMITMENT

It is Freight Customers' obvious right to freely negotiate Quality of Service commitments with Railway Undertakings and to enter into agreement with Railway Undertakings on such commitments.

Contracts between Freight Customers and Railway Undertakings shall include customer service quality provisions in one or more of the following service areas, depending on Customers and Railways respective quality requirements towards each other.

1. Responsibility

Responsibility towards the customer for the entire transport chain will be clearly specified in line with the CIM conditions (which will be considered as the minimal requirement).

2. Safety

Railway undertakings have safety as their highest priority: they aim to move freight in secure conditions, free of damage, and with respect for the environment. Compensation terms and conditions for damage to goods in transit will be defined in the contract. They will respect at least the terms set out in the CIM conditions.

3. Planning

The service planned for the customer – service frequency, departure, arrival times and transport order deadlines – will be clearly defined (within agreed performance margins in line with market conditions) for major traffic flows with quality requirements. Improved international planning processes will be pursued.

4. Punctuality and reliability

Railway Undertakings commit to improve their processes in order to guarantee service reliability and punctuality. Contracts with negotiated quality standards and according to client requirements shall provide for appropriate compensation in the event of unacceptable reliability and punctuality performance.

The compensation structure, levels and thresholds will be individually negotiated in line with business standards and taking into account the respective responsibility of the partners. Processes to develop methods and ensure application will be in place.

5. Information

Railway Undertakings shall provide transport status information, in particular any delays or service changes, to customers as soon as possible. Railway Undertakings will commit to arrangements for defining with the customer the particular reasonable information needs for the traffic flow concerned. Cross border information systems are in process of being worked out.

6. Rolling Stock

When contracted and Railway Undertakings are also rolling stock provider they will provide sufficient, clean freight rolling stock in a timely manner (and according to defined standards). When required by the client contracts may include provisions for any shortfall.

7. Billing

Transparent billing arrangements will be contracted (according to commercial circumstances) between railway undertakings and freight customers.

8. After-sale service

Processes will be in place to ensure the timely resolution of any matters raised by the customer under the terms of the contract.

CUSTOMER SUPPORT

The Railway Undertakings' commitments depend upon customer support on

- Timely customer presentation of wagons and cargo at the handover point;
- Proper and timely receipt of customer documentation.

Railway Undertakings will require appropriate contractual provisions in this respect.

Railway Undertakings may also require contractual commitments from customers on

- The earliest possible notice to railway undertakings of any delays or changes;
- The hand-over of cargo in the form and packaging agreed between the parties.

ANNEX II

List of abbreviations and glossary

CEEC: Central and Eastern European Countries

CEF: Connecting Europe Facility

CIT: Comité International des Transports Ferroviaires, International Rail Transport Committee

CIM: Uniform Rules Concerning the Contract of International Carriage of Goods by Rail

CLECAT: European Association for Forwarding, Transport, Logistics and Customs Services

Consignment: Collection of goods transported under cover of the same transport document in accordance with regulations or tariffs in force, where they exist*

Consignment note: Document prepared by a consignor and countersigned by the carrier as a proof of receipt of consignment for delivery at the destination

Container: Special box to carry freight, strengthened and stackable, and allowing horizontal and vertical transfers

COTIF: Convention concerning international carriage of goods by rail

CT: Combined Transport

CUV: Uniform Rules concerning Contracts of Use of Vehicles in International Rail Traffic (CUV) - Appendix D to COTIF

EDI: Electronic Data Interchange

EN 3834: Quality Requirements for Welding

ERA: European Railway Agency

ERDF: European Regional Development Fund

ERRAC: European Rail Research Advisory Council

ERTMS: European Rail Traffic Management System

ETA: Estimated Time of Arrival

ETCS: European Train Control System

External costs of transport: Costs created by transport users, but paid by society as a whole. These include costs related to accidents, congestion, air pollution, climate change, noise, effects on nature and landscapes, soil and water pollution, biodiversity losses, up and downstream processes and additional effects in urban areas

FIATA: International Federation of Freight Forwarders Associations

Full trainload: Any consignment comprising a train with one or several wagon loads transported together for one consignor with no change in train composition from a single point of loading to a single point of unloading

HACCP: Hazard Analysis Critical Control Points

HDV: Heavy Duty Vehicles

Horizon 2020: Running from 2014 to 2020 with a foreseen budget of €80 billion, Horizon 2020 is the EU framework programme for research and innovation

Intermodal freight transport: Multimodal transport of goods in a given intermodal transport unit by successive modes of transport, without handling of the goods themselves when changing modes

LDV: Light Duty Vehicles

Marshalling yard: Station or part of the station equipped with a number of tracks or other equipment for railway vehicle marshalling (switching) operations (sometimes referred to as 'classification yard')*

Multi-annual contracts: In this type of contract, governments commit to pay a certain sum to the infrastructure manager each year for investments in infrastructure, in return for which the infrastructure manager commits to a series of quality and efficiency obligations

Multimodal freight transport: Transport of goods by at least two different modes of transport*

Navigable inland waterway: A stretch of water, not part of the sea, which by natural or man-made features is suitable for navigation, primarily by inland waterway vessels. This term covers navigable rivers, lakes, canals and estuaries*

NCTS: New Computerised Transit System

NST/R product: Standard goods classification for transport statistics

OHSAS 18001: International occupational health and safety management system specification

Pipelines: A closed conduit, with pumps, valves and control devices, for conveying fluids, gases, or finely divided solids by pumping or compression

Private sidings: Track or set of tracks which are not managed by the infrastructure manager but are linked up with the track of an infrastructure manager, so that:

- Railway transport operators or supportive functions can perform necessary activities;
- Industrial, commercial or port establishment or group of establishments can be served by rail without transshipment*

QMS: Quality Measurement System

RAILDATA: International Organisation of Cargo Railway Undertakings for Development and Production of Central Information and Data Exchange Systems for European Freight Rail Transport

RMMS: Rail Market Monitoring Scheme

RUs: Railway Undertakings

Short sea shipping: Movement of cargo by sea between ports situated within a relatively narrow geographical area (including ferry and feeder traffic). For Europe, short sea shipping consist of the movement of cargo by sea between ports situated in Europe, as well as between ports in Europe and ports situated in non-European countries having a coastline on the enclosed seas bordering Europe*

Single wagonload: The 'single wagonload' offer consists of conveying individual wagons, which are taken from place they are loaded (or unloaded) to a point of assembly, called 'marshalling yard', where they are sorted by destinations into trains towards other marshalling yards before being dissembled and dispatched to their final destination

SMGS: Agreement on International Goods Traffic by Rail

SQAS: Safety and Quality Assessment System (for chemical industry)

SRRA: The Strategic Rail Research Agenda 2020

Swap body: A freight-carrying unit optimised to road vehicle dimensions and fitted with handling devices for transfer between modes, usually road/rail. Such units were not originally designed to be stacked when full or top-lifted. Many units can now be, although not to the same extent as containers*

TAF SEDP: TAF Strategic European Deployment Plan

TAF TSI: Telematics applications for freight subsystem of the trans-European conventional rail system

TEN-T: Trans-European Networks

TEU: Twenty-foot Equivalent Unit. A TEU is a standard unit based on an ISO container of 20 feet length (6.10 m), used as a statistical measure of traffic flows or capacities. One standard 40' ISO Series 1 container equals 2 TEUs

TID: Train Identifiers

Tonne-kilometre (tkm): Unit of measurement of goods transport which represents the transport of one tonne of goods over a distance of one kilometre*

Track gauge: Distance between a pair of rails measured between inside edges of the rail heads*

TSIs: Technical Specifications for Interoperability

UCC: Union Customs Code

UIC: International Union of Railways

UIRR: International Union of Combined Rail-Road Transport Companies

VDA 6.2: Quality management standard (for the automotive industry)

* Source: Eurostat, International Transport Forum, United Nations Economic Commission for Europe, *Illustrated Glossary for Transport Statistics – 4th edition*, 2009

ANNEX III

List of figures