

## DEVELOPMENTS IN FREIGHT AND PASSENGER RAILWAY

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**ABSTRACT:** Railway has and should have a key role in ensuring sustainable mobility. He contributes to this objective by maintaining cleaner environment and energy security. European Union (EU) Directives adopted in this respect obliges member states to develop a competitive rail and high quality. The rail inherent environmental benefits, is a key contributor to sustainable development. The full liberalization of the rail freight market since 2007, will allow customers to use the benefits offered by rail. The paper proposes an analysis of freight logistics in terms of rail freight and logistics supports the importance of development and sustainable mobility within Europe and Romania. Also, the paper tries to answer some aspects: interoperability, multimodal transport and travel.

**KEY WORDS:** railway, freight, logistics, interoperability, multimodal transport, intermodal transport.

### 1. INTRODUCTION

Freight transport logistics is primarily a business - related activity and an obligation for industry [1-3]. The role of European and national is to create appropriate framework conditions. The European Union considers that it requires a greater focus on the key role of rail freight as the solution of many problems of the transport sector. Being organic means that can carry large volumes of freight, rail freight efficiently manage traffic congestion, accidents, pollution and reliance on fossil fuels and energy loss, all referred to as negative effects of transport in Europe intensified.

Environment and customer service should be a central part of political considerations on freight transport logistics. EU member country in part to:

- To explore ways of designing tools and trade scheme for the taxation of energy and CO<sub>2</sub> emissions for different modes, so that the most environmentally friendly logistics solutions able to reduce costs;

- Seek ways to encourage the use of “*storage and stock management*” instead of repeated use of the “*just in time*” (to limit the distribution of small consignments of goods that absorb more energy);

- Try to reward companies that adopt environment-friendly logistics solutions;

- Try to develop methodologies and statistical indicators that highlight various logistics solutions that respect the environment.

In addition to environmental benefits involved, the European railway companies also offer the advantage of being real actors’ intermodal logistics market. Indeed, railway companies, offering personalized service to their customers integrated transportation solutions including last minute road transport [4]. Also, some railway companies have (partially) road transport companies and are therefore able to provide the best possible transport solution.

European Commission (EC) intends to identify bottlenecks in the supply chain, regardless of their nature (administrative, IT, infrastructure, operations, price, etc.). Industry stakeholders should be involved in

solving these bottlenecks through their representative bodies [5 - 7, 9]. To this end, a better and effective way to identify bottlenecks is the direct involvement of stakeholders by participating European Intermodal Research Advisory Council (EIRAC) instead of creating new organizations. A working group of EIRAC (related ERRAC - European Rail Research Advisory Council) could readily identify bottlenecks and their solutions.

### **1.1. North-South Asian Corridor**

An important aspect of awareness of transit potential of Russia and other CIS countries is the development of North-South Corridor Asian. The main direction of the North-South corridor ensures freight traffic in Northern Europe through Russia via the Caspian Sea to Iran, the Persian Gulf and India, and also to the Caucasus and Central Asia. This corresponds to the interests of participants in the transport process, including owners of freight transport and business representatives from the transport and forwarding, thus contributing to social and economic development of the region.

It refers also to the development prospects of the North-South corridor, increasing the flow of goods in transit across the Caucasus region, the mechanisms for balancing the export - import freight traffic and opportunities for implementing potential multimodal logistics services and improve cooperation between national railways to increase the competitiveness of the North-South corridor. For Azerbaijan, the preferred option is to implement corridor within Azerbaijan, as this route is shorter and involves crossing only a transit country, which already has built railway infrastructure. According to forecasts, the volume of goods transported through this corridor could reach 25 million tons annually. Furthermore, the project of connecting the railways of Russia, Azerbaijan and Iran envisages investment worth over 300 million dollars, most of the amount would need to be spent on work in the territory of Iran.

Representatives railways in Kazakhstan, Georgia and Latvia believe that projects implemented in their countries and prospects of development of this transit corridor for the countries of Asia, it is appropriate for the European market. Potential development project North-South Corridor, especially development route Russia - Azerbaijan - Iran, the major economies of the region. The project is of great importance, since the volume of freight through the corridor is estimated at a level of 19 million tons by 2030 and freight potential comes from the Persian Gulf and Asia.

A comparative analysis of the delivery times for freight transport in Europe and Russia, the countries of the Persian Gulf and South Asia shows that the advantage of direct rail route using the new railway line Qazvin - Rasht - Astana could be up to 10 days. According to the technical and economic capacity of the new line Rasht (Iran) - Astana (Azerbaijan) could reach 9 million tons in 2015 and over 19 million tons by 2030.

Also observe structural changes in the management of rail and transport and transit potential of the countries of Central Asia. Railroad representatives from Azerbaijan, Georgia and Kazakhstan have noted the need to enhance cooperation in the development of transport corridors, the countries of the Caspian Sea and Transcaucasia regions. Importance TRACECA Transport Corridor, which provides freight route Europe - Caucasus - Asia, should also be noted. However, one of the main complications of the corridor is that the involves two transshipment, one in the Caspian Sea, and one in the Black Sea region, which also affects the time required for transport.

### **1.2. Eurasian railway platform for businesses**

The European Union is struggling to build a single market for rail transport, particularly freight sector. Long tradition of approaching rail networks as independent structures, unique and meanings national role in protecting local businesses tune into the

mobility market. Even in this period ministers and the MEPs are pressures from lobbyists to change the meaning of proposed Rail Package 4 by introducing exceptions and exemptions which, ultimately, keeping a closed market, real liberalization hostile. Although talk of a long-term vision which aims at transferring a significant share of freight transport from road to rail, institutional and administrative barriers intended to be kept in the Member States will perpetuate the fragmentation of the market, undermining this goal.

In eastern Europe, large geographical areas tend to unite again in order to create an attractive setting for carriers on routes connecting the Far East to Europe. Russia continued its restructuring plans of the railway sector, transforming it into a true business platform, where there is both great local tycoons and multinational groups.

Repositioning a company mainly RZD infrastructure and investment and outsourcing, combined with privatization of transport, and allow concentration of public funds to infrastructure development and participation in large international projects with a dynamic investors transport companies seems to overcome much behavior of European companies. Listing on stock exchanges has become a fashion that allows raising capital, but also a certain business visibility and credibility.

In this context Russia, Kazakhstan and Belarus continue with Eurasia project, creating a joint venture to facilitate rail freight in the common area. Amid common technical and institutional traditions is easily secured to ensure interoperability, allowing the construction of attractive commercial offers great transport intercontinental. O similar view can be seen in Central Eurasian bloc.

Turkey continues along with Georgia and Azerbaijan the Baku - Tbilisi - Kars, while joint project of Afghanistan and Tajikistan Turkmenistan attention of neighbors (China, Iran and Kyrgyzstan) to find the fastest and cheapest routes to the Indian Ocean. During this context it is interesting to watch and the future position of Iran, which may come in "isolation" in the future and which, together

with Armenia, aimed at ensuring the long north-south axis linking the Persian Gulf to North Russia.

## 2. SERVICES UNIT FOR INTER-MODAL FREIGHT TRANSPORT

Representatives of the European railway sector are finding it necessary to take measures to enhance the credibility of this mode of transport in direct relationship with the beneficiaries, ensuring punctuality and regularity in freight transport. Step by step, a network of railway lines to be dedicated exclusively for the carriage of goods, so that this mode of transport is preferred by those that trade.

Improving rail freight on the relationship 1520 - 1435 mm is an ambitious and complex project. Despite its recognized benefits, especially in the segment of heavy and bulky rail is difficult for reasons such as technical details and the legislative. Are those difficulties to be overcome by creating an interoperable network across Europe and the corridors that link Asia.

One of the findings of a study released by the International Union of Railways (UIC) program launched by DIOMIS (Development of infrastructure use and operating models for intermodal exchanges), referred to as segment positioning hinterland traffic development in the near future. The study provides a transfer of traffic from north-south to east-west axis and anticipate an average growth rate of 8% a few important conditions are met.

In this regard, industry and gave their views on the conditions necessary to ensure further modal shift to rail, concrete business cases. Investments in infrastructure and upgrades so that permit access to longer and heavier trains, railway terminals coordinate the development, availability of equipment (cars and frames), cross-border interoperability, non-discriminatory access to terminals, service efficiency and use taxation infrastructure were cited as priorities to ensure that growth forecasts will occur [9-11]. Program description DIOMIS promoted the benefits of international approaches to

planning and production (taking into account freight) to establish basic principles for a common approach to improving intermodal services.

One of the most effective methods of simplification and harmonization of cross-border traffic is the TAF - TSI's developed to facilitate the international exchange of information on cross-border rail freight services. Another measure that can be taken to increase the attractiveness of rail freight is to reduce the volume of document required. Both organizations and associations specialized sector and railway operators, public or private, shall cooperate to simplify these procedures in particular international traffic.

To achieve a cross-border freight transport system and efficient unit is needed to encourage new types of collaboration between all operators involved in intermodal transport, in terminal operators, freight operators combined freight handling and rail operators freight, infrastructure managers and decision makers authorities nationally and internationally [12].

It also needs to adapt and improve more effective operating practices regarding railway operation in order to unlock an already saturated and the network responds to the future requirements of the freight market.

### **3. CARGO TRANSPORT NEED A "PAPERLESS"**

One of the objectives of the International Rail Transport Committee (CIT) is the flag expedition interoperability schemes which operate freight companies, namely obtaining legal interoperability CIM / SMGS.

In May 2010, at a meeting of the Management Committee, established by the Convention on the harmonization of frontier controls of goods (signed in Geneva in 1982) adopted a new Annex to the Convention on the simplification of border crossing procedures for international rail freight. The purpose of the annex is to facilitate international trade by reducing, harmonizing and coordinating procedures and paperwork related to border

control of goods in the international carriage of goods [13, 14].

Appendix contains essentially obligations aimed at reducing delays at border crossings by railway. This refers to the introduction of minimum requirements for border stations (exchange), cooperation between countries in stations, moving controls at border stations of departure or destination, reducing the time required for controls and reduces the number of paper documents.

### **4. INTEGRATED NETWORK OF MULTIMODAL TRANSPORT**

For intermediate distances, new technologies are less developed and modal choices are more limited than in the city. But this is where the Transport White Paper may have the most direct impact because there are fewer constraints from subsidiary or international agreements. It is unlikely that the mere use of vehicles more efficient in terms of energy use and cleaner fuels to provide the required reduction in emissions or tackle congestion.

Better integration of modal networks will lead to an increased number of modal choices such airports, ports, railways, metro and bus stations should be more closely linked and transformed into multimodal connection platforms for passengers. Online information systems and electronic booking and payment systems that integrate all modes of transport should facilitate multimodal travel. Greater use of collective transport modes must be accompanied by an appropriate set of passenger rights. [8]

Although the scope of public service contact is widespread in EU member states, many of inland passenger transport services which are required in terms of general economic interest still can not operate commercially. The competent authorities of the Member States to act to ensure that such services are provided.

Mechanisms that these authorities can use to ensure the provision of public passenger transport services include award of exclusive rights to public service operators, financial compensation, and public service operators to

define general rules for the operation of public transport that apply all operators.

Many Member States have adopted legislation providing for the award of exclusive rights and public service contracts at least part of their public transport market, on the basis of transparent and competitive award procedure equitable. Therefore, trades between Member States have developed significantly and several public service operators are now providing public passenger transport in several Member States. However, developments in national legislation have led to disparities in the procedures applied and have created legal uncertainty regarding the rights and obligations of public service operators authorities.

Public service contracts should be to support passenger rail operators in the sense of supporting multimodal passenger transport intensification. A higher proportion of journeys by public transport, combined with minimum service obligations, will allow increasing the density and frequency of service, thus generating a positive circle mode of public transport. Demand management and landscaping plans can reduce traffic volumes. Transport urban and suburban rail, facilitating walking and cycling should become an integral part of urban mobility and infrastructure design.

## 5. CONCLUSIONS

The most important aspect to be addressed at the political level in the intermodal is to establish a field equal for all modes of action, while each mode shall bear all costs (whether internal or external) and funds raised will be used to finance new infrastructure for ecological modes. True intermodal can be done in a balanced way only on equal terms [15].

Apart from this specific, any government intervention in what part of the free action of market players is counterproductive compared to what could be achieved by adapting operators market and customer demand. Regulators are trying to facilitate intermodal transport on the one hand, while on the other

hand, increased administrative burdens faced by transportation companies.

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