

## ACTION PLAN ON THE COMPETITIVENES OF THE RAILWAY FREIGHT TRANSPORT IN THE VISEGRAD (V4) COOPERATION AREA

JERNEY ZOLTAN\*<sup>1</sup>, BODNAR KAROLY\*<sup>2</sup>

<sup>1</sup>University of Debrecen, Karoly Ihrig Doctoral School of Management and Business, Debrecen, Hungary

<sup>2</sup>Szent Istvan University, Faculty of Agricultural and Economic Studies, Szarvas, Hungary

\*Corresponding author's e-mail: jerneyz@t-online.hu, bodnarkaroly.dr@gmail.com

**Abstract:** *The railway freight transport is essential for those countries in Central Europe which do not have seaports. On the other hand there is a continuous competition between the different modes of transportation. The aim of the study was the elaboration of recommendations in order to increase the competitiveness of railway transportation mode. A general overview of the European transport market and a present status quo of the multi-modal freight transport were presented. The main proposals were the following: closer cooperation of the countries, unified support system for multi-modal transport, development of IT solutions, development of infrastructure on the borders.*

**Keywords:** *logistics, railway freight transport, Visegrad cooperation (V4), multi-modal transport, single wagon load*

### INTRODUCTION

On their historical background and due to their geographical and economical similarity Poland, the Slovak Republic, the Czech Republic and Hungary formed the Visegrad Group (V4) partnership in 1991. Their transition to market economy led to significant economic and social development, but not really in the railway industry [8]. Among V4 countries Hungary has a favourable geopolitical position, which may promote the strategic aim of becoming the logistic centre of the Central-European region [6].

The reorganization of the railway market, the reform of railway companies, the separation of business activities and infrastructure resulted a growing competition mainly in the freight market. The V4 partner countries as neighbour countries presents perspective platform for collaboration in the development of infrastructure [10] in the Trans-European Network – Transport (TEN-T) corridors implementing the goals of Europe 2020 strategy.

Road transportation is the dominant mode (49%) of freight movement across the EU, which is a cost effective and flexible mode, but it causes high level of CO<sub>2</sub> emission and accidents. Its dominance in South-East European countries may also due to the lower requirements for infrastructure, standards, and legal framework [7]. In order to realize an increasement of at least 12 % of the freight transport from road to rail, among other factors a number of developments should be performed in the railway sector [12]. It has to be noted that these advancements are required both for the freight transport and for the passenger transportation as well.

Additionally, a significant part of new terminals and logistics centres, in spite of their location in the development area of the Baltic-Adriatic transport corridor, is related to German ports in geographical connection performing as-built functions. Cargo air traffic does not play important role as airports have not reached adequate turnover levels, even though their capacity could contribute to a growth in the transport corridor effectiveness. Poland is assigned the role of the main logistics centre of Central and Eastern Europe [14], mainly in the link of the increasing importance of trade exchange between Europe and Far East (particularly China). Occasionally there will be intensification in the role of transit countries in the direction of the ports of the Adriatic, Aegean or Black Sea.

Railway freight transport has a complex problem: to deliver goods to the customer, so-called "last mile" problem. Intermodal transport effectively handles this problem [2].

This system is a necessary element of transport policy in Europe, particularly due to decreasing the negative affects of road transport on the environment, fuel and energy consumption, maintenance costs on roads, land use and safety.

Railway infrastructure is a monopoly in most of the EU Member States. In order to render railway transport efficient and competitive with other transportation modes, the governing of the infrastructure has to provide infrastructure and service capacity related with the transport function for all railway operators in a way that eliminates any exceptional advantages for any railway companies [4].

The rail transport is a well regulated sector in the European Union legislation. This industry was successfully opened for the competition, unlike it happened with the passenger rail transport [1]. Liberalisation is one of the elements of economy to rise competitiveness of railway transport in the freight market. Partly the appearance of new railway companies into transport market can enhance the quality of rail services, technological modernization, etc., or it partly allows costumer to choose among railway operating companies and thus strengthen correlation between quality and price [3].

Based on market shares and trends, there is no significant change in intermodal competition in V4 countries, which would be one of the fundamental objectives of EU directives. The market is rather stagnating [9].

Rail Cargo Hungaria Co. (RCHUN) still preserves the greatest market share in Hungary. Determining conditions for that company was the fact that its resources and attainments were combined with parent company Rail Cargo Austria. The second remarkable participant is the GySEV Co. which, similar to RCHUN (former MÁV Cargo Co.), endured a 25% decrease in the recent past [5].

Concepts about the logistics interpretation of material flow of rail freight transport are ignored by almost all participants of the process [13]. The methodology is suitable for any stakeholder that will need to evaluate the functional achievement of material flow in the fulfilment by different suppliers based on objective indicators.

The aim of this study was to present a short overview on the position of Hungarian railway freight transport among the countries of the Visegrad cooperation.

## **MATERIALS AND METHODS**

The study was based on the scientific literature of freight transport of V4 Countries, and data came from EUROSTAT and the database of Rail Cargo Hungaria.

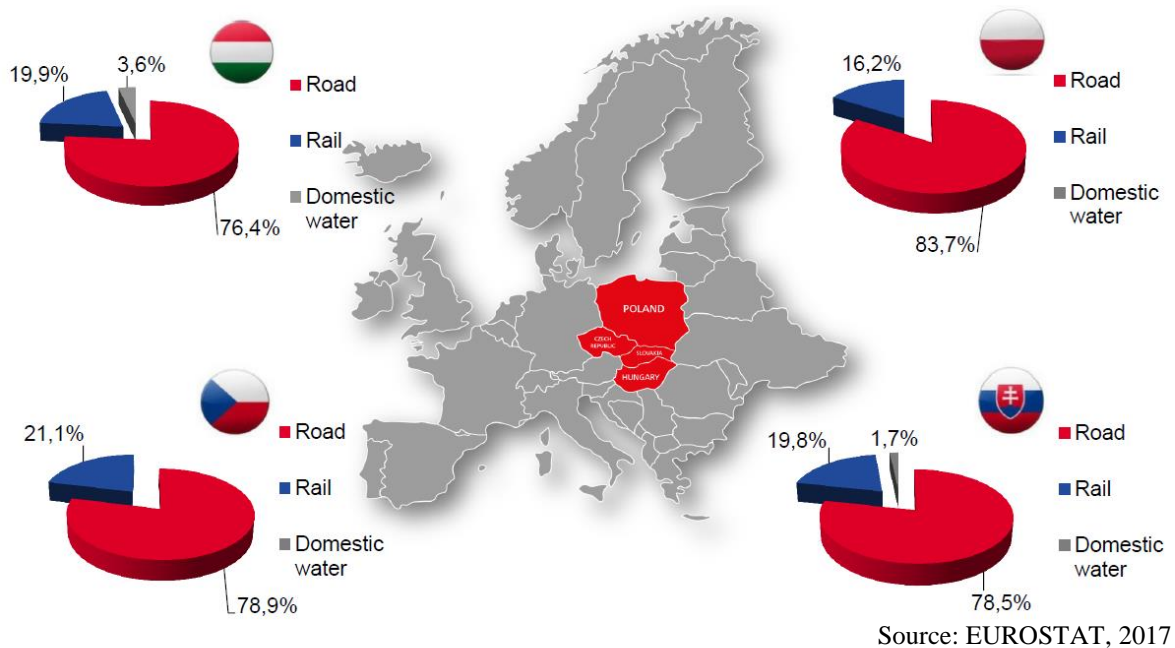
## **RESEARH RESULTS**

The European share of freight transport by road between freight transport systems is currently above 75% (Figure 1). The shift in the share of rail freight (currently 18% for land transport across the EU as a whole) can be substantially altered by the shift of two factors, one of which is the increase in total volumes of transport-intensive goods and the reduction of road share between inland modes. A brief list reflects the limitations and challenges of the two land transport modes:

Railway freight volume changes with the change of other transport modes' price in the same orientation [15].

In the process of rail transport, a train route license is required in advance, there is no door-to-door carriage, every km is subject to fee, and the trains have to stop because of locomotive and driver replacement. In the case of road haulage, there is no need for a prior

request, a significant number of road hauliers are faced with the limited number of rail freight companies, door-to-door carriage, one vehicle has one driver, fewer stop, and shorter freight time.



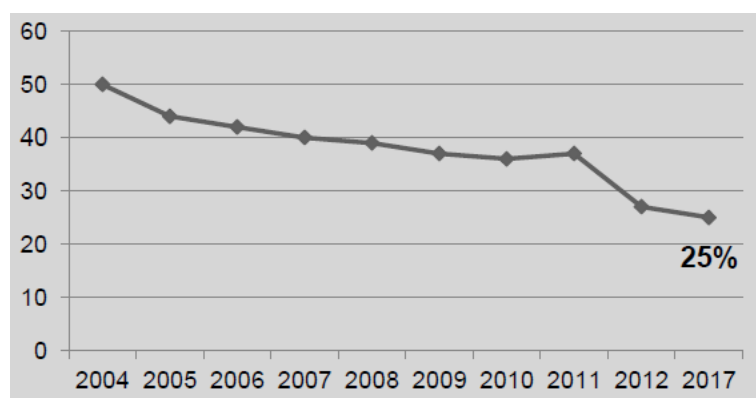
**Figure 1. The share of freight transport in V4 countries**

This ideas also reflects the fact that the competitive position of ground freight modes is not based on a conditionality, but the railways may have a preference for carriage of long distance and/or heavy goods. The outbreak strategy of the European railways should not be achieved in the first place by fighting against each other, but in cooperation, in the mapping and application of synergistic effects on road freight transport systems. Co-operation between railway companies is not only a matter for the Hungarian railways, but also for the joint fusion of the railways of the V4 countries. These practical forms of implementation have to be framed at a plan level and then, in case of appropriate test compliance, the necessary resource allocation activities will be implemented to begin development as soon as possible. The railway development strategies of the V4 countries are largely similar, and the priority of infrastructure development at the state level prevents everything.

Raising the railway track to a minimum speed of 160 to 200 km/h on transit routes is essential, this technical condition is necessary to strengthen road competition. The time to go to the goods lies in the primary elements of the competitive strategy, and in the accelerated world, winners will be able to offer quality services sooner and faster. Reducing shipping times is a competitive advantage for customers, for which they are willing to change their way. By itself, the development of the tracks at the right speeds does not yet give enough results, it is necessary to develop the quantitative and, above all, qualitative development of the towed and towed vehicle fleets in the field of technical developments. Increasing the number of locomotives that are capable of upgrading high-performance power and speeds is the next condition for competitiveness. It should be mentioned among the developments that the number and composition of the truck fleet and the qualitative change in the quantity of the truck fleet are indispensable. In parallel to technical developments, technological developments and collaborations need to be prioritized by spreading the use of solutions such as interoperability issues or digitalisation

in the broadest possible scope. Prepare the shipment and provide sufficient time for action to take the necessary steps. Recognizing the technical parameters of the trains on a credible basis would minimize boundary times, and possibly eliminate them, which would also improve their journey times.

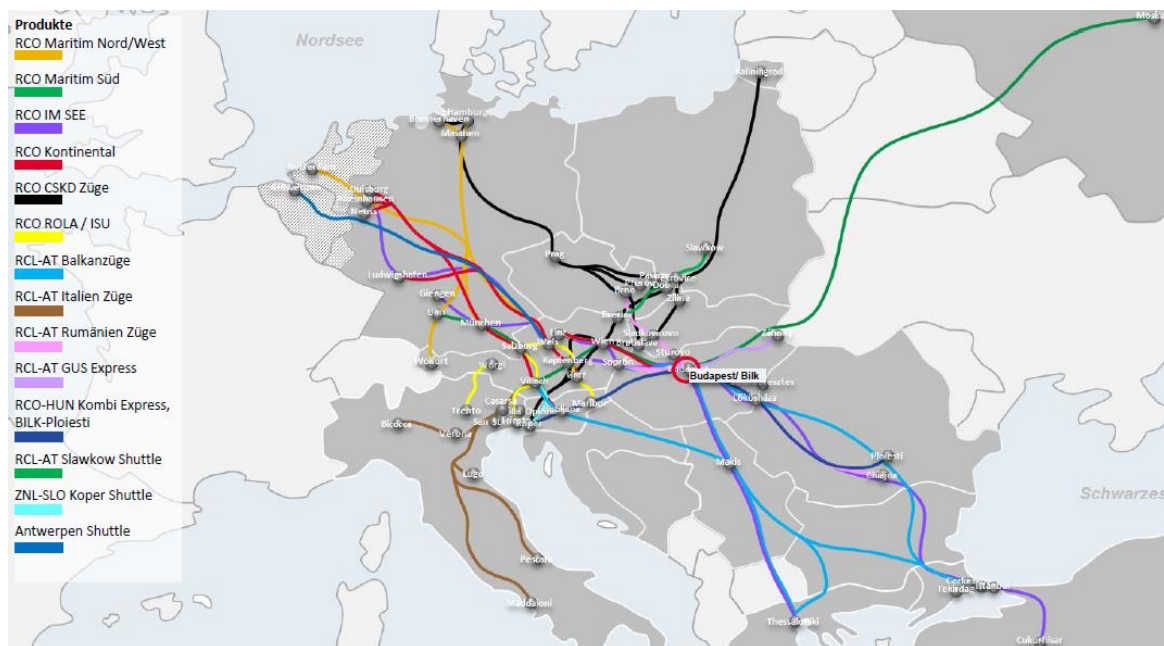
Co-operation between railway companies in the V4 countries would serve the intensifying economy of the region, boosting stability and sustainable economic development. Significant changes should be made on the domestic railway market to increase the transmission of single wagons (Figure 2). It is a difficult question, as the falling carriage and train traffic resulted in the narrowing of stations, lines of boundaries, and bottlenecks. Increasing the international traffic of single wagons [11] would not only be of interest to railway companies with significant turnover in the country but a significant part of the European railways.



**Figure 2. Percentage of Single Wagon Load traffic on the European rail freight market**

*Source: EUROSTAT, 2017*

For this recognition, six European railway companies are involved, including the Rail Cargo Group. The aim is to increase the market share, efficiency and competitiveness of international single cargo traffic. The conditions for development include the operation of a coordinated capacity allocation system, an optimized system of harmonized international freight timetables and the use of state-of-the-art IT systems. The breakdown strategies include a significant increase in the share of combined rail freight. The trend shows significant potential growth not only on domestic but also international level, both in quantity and in the extended route size. This is mainly due to the steady rise in the volume of seaborne traffic, with some of the most significant rise indicators, such as Rotterdam, Hamburg and Piraeus (Figure 3). Changes in the turnover of North Adriatic ports measured at TEU unit at each port (Rijeka, Trieste, Venice and Koper) shows a significant increase, which also raises the return and return traffic. The primary cause of growth is the steady rise in Chinese merchandise trade, which is mainly due to the sea route to Europe and the ports are transported by rail to the delivery distribution systems. Despite the nearly 40 days of sea transport, the volume of goods arriving only by rail in 20 days is still very small. A significant increase is still expected with regard to the turnover of the Port of Piraeus, which ultimately leads to an increase in the share of the rail and, in particular, intermodal units.



**Figure 3. The intermodal and conventional traffic of the Rail Cargo Group**

*Source: Rail Cargo Hungaria, 2017*

## CONCLUSIONS

It is worth making a strategic partnership in the following areas with the V4 countries to increase the efficiency of rail transport. From the point of view of the single wagon load traffic and the multimodal transport, consider the steps that are essential and necessary for cooperation. Implementing interoperability for the four countries, developing standard mixed flow for each truck, focusing on digitalisation, and introducing information technology to as many segments as possible. The uniform design and application of the combined freight transport support system to cover the growing demand. The implementation of the above is likely to induce the success of all the associated railway companies, and at the same time increase the share of rail freight in the region of Central Europe.

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