

CONNECT TO COMPETE. THE LINK BETWEEN INTERMODAL TRANSPORT AND LOGISTICS

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Abstract. *During the last decades, the term of logistics regroups a wide range of activities. For a while, the assumed meanings were limited to external flows, namely for transport and distribution. The race to development new technologies together with collateral management brought the logistics approaches into complex understandings and use. Today, the logistics sector has grown, putting together persons and systems. This vigorous impetus is mainly due to the phenomena of outsourcing the logistics of industrial enterprises and the increased complexity that the transport and logistics sector benefits of. It has become a new economic area, in addition to transport, that includes storage, handling, real estate management, information services, etc. If we make the analogy between a logistic organization and a house, each logistic activity can be likened to a room. Each room contains three elements: processes, people and systems. The processes are likened to the walls, ceilings and floors and define the relationships between activities, people are tenants who are working with processes and the systems are the electrical installation that is connecting the rooms. The main objective of the present paper is to reveal the role of intermodal transport in logistics for the reference of further improvement. This paper was conducted to assist logistics and intermodal transport managers and researchers to comprehend the basic elements of logistics and intermodal transport, and its various applications and implications in intelligent transportation systems.*

Keywords: *complex logistics, intelligent transport systems, competitiveness, sustainability, innovative concepts.*

JEL Classification: L91, M16, O18, P51, Q57.

1. Introduction

The current period, characterized by extensive transformations in the economic and social sector, in all fields of activity, is significantly

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influencing the industry of infrastructure. The impact of this sector is even more relevant because it manifests two contrary trends. On the one hand, an initial tendency is to limit direct investment funds earmarked for infrastructure development and maintenance, but, on the other hand, infrastructure projects constitutes a reliable economic activity such as constructions, the production of raw materials etc., to maintain the unemployment level controllable. The positive result of those two trends shown is influenced by the ability of the authorities to allocate the appropriate resources on the most relevant projects, with the economic and social potential, and which are capable of generating revenue. Throughout the current transformations, I noted the need for increasingly larger infrastructure projects that can solve most of the problems faced by people, organizations and governments. The intensification of international trade with the major products and services requires the creation and operation of fast transport solutions between different countries and even continents. The emergence and consolidation of transport corridors, in particular the road and rail, is a priority for all states, which has generated a situation of competition for choosing the best version in the shortest time. As I mentioned the status and level of development of infrastructure is a key factor for the development of sustainable transport.

2. Characteristics of intermodal transport

Countries from around the world are trying to stimulate the intermodal transport in order to achieve sustainable development, while the demand for intermodal transport is continuously decreasing because of the present economic crisis. The main characteristics of the intermodal transport are different from a region to another; the European intermodal system is influenced by traditional and modern concepts of different means of transportation. Most European countries are interconnected; the distances between the regions of the European Union are motivating the development of the intermodal transportation and the logistic systems. Improvement in these systems will provide many benefits including better services and the reduction of costs. Since Europe has the busiest ports and airports in the world the need for containerized cargo is vital for the development of the logistics infrastructure in some countries.

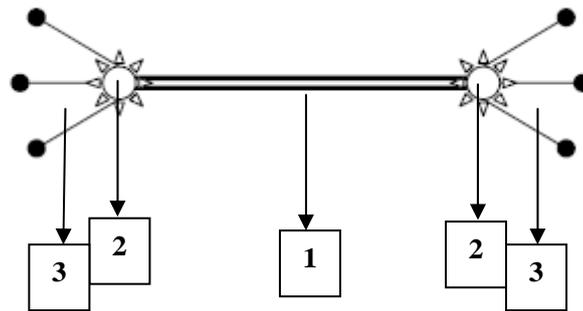


Figure 1. The structure of the intermodal transport system is based on three elements.

Source: http://www.mt.ro/nou/_img/documente/strategie_de_transport_intermodal_text.pdf.

Legend:

1. a system of transport of goods over long distances;
2. transport terminals which provide efficient transfer of units load on a modal transport system to another;
3. a system for the collection and distribution of flows of goods from the points of destination of the transport chain.

To improve the intermodal transport in the E.U.¹ it is necessary to improve the cross-border documentation to increase the productivity of rail and road transport (ECMT, 2001). The NAFTA² region is based on land transportation with a very efficient road and rail systems, and has a limited need for cross-border documentation.

3. Logistics and intermodal transport

Logistics and intermodal transport will influence the development of the global economy, and face the multiple challenges and obstacles that will lead to ever-stricter service requirements and an increasing number of small consignments. The main cause of the relatively low development of intermodal transport is its inability to respond in a satisfactory manner to the requests of logistics customers in the new environment.

It was found that significant time is lost in the transfer terminals of goods on/from the means of transport to their deposits or trans-shipping between vehicles of the various transport modes. The measures of the

¹ E.U. – European Union

² The North American Free Trade Agreement (NAFTA) is an agreement signed by the governments of Canada, Mexico, and the United States, creating a trilateral trade bloc in North America. The agreement came into force on January 1, 1994

increase efficiency of intermodal chain targets are like investments and organizational solutions applicable in intermodal terminals.

Therefore, in order to comply with these strict service demands and to be able to compete with road transport, intermodal transport needs sophisticated logistics concepts, using advanced information systems.

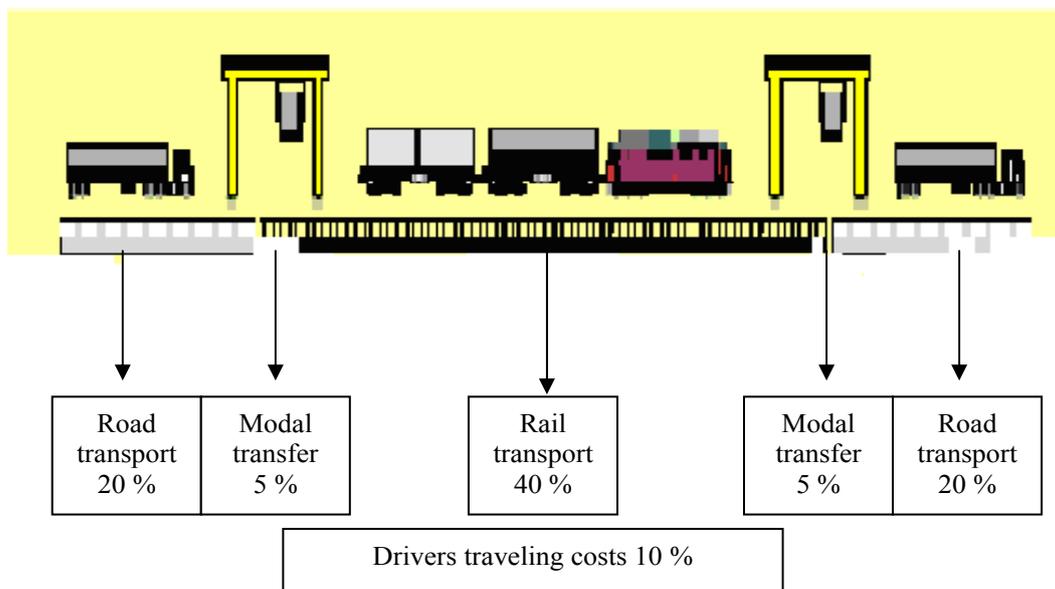


Figure 2. The share of the costs involved in intermodal transport

Source: <http://www.agir.ro/buletine/527.pdf>

4. Overcoming the obstacles of intermodal transport

The intermodal transport sector is essential in the society in which we live and for the current state of the economy; it is vital for a sustainable economic growth and for the creation of new jobs. In the European Union in the transport sector there are working about 10 million people³ (see table no. 1), who produce approximately 5% of GDP⁴.

³ According to EUROSTAT indicators from 2009

⁴ Gross domestic product (GDP) is the market value of all officially recognized final goods and the services produced within a country in a given period of time

Table 1.
Key indicators, transportation and storage in the E.U., 2009

	Number of enterprises (1 000)	Number of persons employed	Turnover	Value added (EUR million)	Personnel costs	Investment in tangible goods
EU-27 (1)	1 110.5	10 580.4	1 137 291	436 643	297 427	126 012
Belgium	16.7	198.1	42 281.3	13 043.1	9 146.1	4 549.8
Bulgaria	19.3	161.1	4 337.1	1 343.6	752.7	485.7
Czech Republic	39.5	285.1	17 547.1	5 751.3	3 588.2	1 536.8
Denmark (2)	13.9	320.7	47 505.7	11 677.9	7 048.8	6 427.6
Germany	87.5	1 846.3	217 029.6	86 453.3	53 233.0	19 503.0
Estonia	3.9	37.2	3 505.6	844.7	442.9	296.1
Ireland	10.1	82.2	13 004.4	4 856.0	3 641.6	2 143.4
Greece	.	.	.	.	.	.
Spain	220.8	937.3	94 780.7	39 789.3	24 754.1	13 374.5
France (3)	85.8	1 300.6	177 429.5	73 025.9	57 057.5	.
Italy	137.4	1 125.2	125 984.4	48 641.4	36 097.8	15 771.8
Cyprus	3.7	21.1	1 737.0	867.6	536.6	263.5
Latvia	5.4	70.5	3 701.4	1 286.8	651.8	364.1
Lithuania	7.0	93.5	4 021.3	1 196.1	737.6	378.1
Luxembourg	1.0	23.3	4 222.3	1 370.5	1 156.3	119.0
Hungary	31.4	224.7	12 455.5	3 355.2	2 528.3	2 492.9
Malta	.	.	.	.	.	.
Netherlands	26.1	415.8	66 485.2	22 532.2	16 282.4	4 636.7
Austria	13.8	211.6	34 357.0	12 745.3	8 504.4	4 717.8
Poland	132.0	715.0	29 403.8	10 066.2	5 522.2	2 369.6
Portugal	24.1	168.7	16 567.9	6 676.9	3 993.5	2 765.4
Romania	35.1	335.2	9 488.1	3 349.5	2 083.8	2 393.2
Slovenia	8.8	52.6	4 067.6	1 350.5	951.4	872.4
Slovakia	0.6	92.5	4 702.9	1 363.3	1 155.3	1 367.5
Finland	23.3	152.5	19 677.3	7 284.7	5 396.0	1 688.2
Sweden	28.9	265.1	36 208.7	11 056.6	8 901.9	2 831.1
United Kingdom	67.9	1 225.9	143 803.1	62 961.5	39 853.7	13 904.6
Norway	21.8	152.3	33 321.8	12 323.5	7 166.6	5 267.2
Switzerland	4.4	201.6	37 502.8	16 641.7	11 413.4	6 623.5
Croatia	11.7	82.6	3 739.4	1 746.0	1 106.6	486.0

(1) Investment, 2008.

(2) 2008.

(3) Number of employees instead of number of persons employed.

Source : Eurostat (online data code: sbs_na_1a_se_r2)

Source: http://epp.eurostat.ec.europa.eu/statistics_explained/index.php?title=File:Key_indicators,_transportation_and_storage_%28NACE_Section_H%29,_2009_A.png&filetimestamp=20120604154315

Efficient transport systems are a decisive factor for the ability of European companies to compete in the global economy. European companies pay for logistic (transport and storage) 10-15% of the cost of a finished product. The quality of transport services has a major impact on the quality of life of the population.

4.1. Lack of intelligent means in the infrastructure

In the new concepts of infrastructure the lines of demarcation between producers and users, emitters and receptors are eliminated – they have new implications of accessing these borders. Infrastructure is becoming more consistent, and connects a wide range of applications within the company, in particular in the field of production. The present lack of intelligent means in the infrastructure needs, on the basis, solutions that are extended requests and requirements far too complex or even impossible to fulfil without smart solutions that are constantly facing new challenges.

Another major impediment for the development of the intelligent infrastructure in the E.U. is the lack of marketing and service information. However there is a complementary modal system that encourages the development of a wide range of services that links the modal services already existing to companies that have the best chance to develop the skills to serve the increasing demand for high quality logistics.

4.2. The constant changes in the infrastructure

Infrastructure should provide longer service life and ensure compatibility and insights thanks to the flexibility and capacity expansion. Therefore, infrastructures have a contradictory nature: ● some are structural conservative – in a positive sense – they have a long service life and guarantees the compatibility sustained investment; ● the infrastructure must provide flexibility to overcome huge challenges in the future. Therefore, combining infrastructure tasks require altered concepts that allow users to integrate technologies that are already exists. To achieve these capabilities in most cases it is necessary to adapt the intelligent infrastructure to the existing one. In a communication network with different applications, this means active management with intelligent network components. Related technologies are the key to new infrastructure solutions, so that compatibility does not affect innovation. In

many cases, new infrastructure technologies need to comply with the existing infrastructure.

5. Conclusions

Logistics and intermodal transport represent an industry which had seen a strong evolution after the Second World War and especially in the past three decades regarding the role and forms of development in the economy. The logistic and intermodal transport sector has faced many challenges such as local levies licenses, increased complications in handling multiple impacts of vendors and suppliers, central and state tax and foreign regulations.

The objective of the logistics and intermodal transport system is to maximize profits, not sales. No logistic or intermodal transport system cannot simultaneously maximize the customer's service and minimize distribution costs, which are required in the first phase to investigate the importance of customer service to various distribution services and then establish the level of service for each segment. It can be said that the objective of the logistics and intermodal transport marketing system must be to provide a level of customer service in terms of the smallest cost.

In conclusion, the main relevant indicators should be selected and for which data can be obtained. They should be applied in a circumstance that provides the industry and government with the necessary insights to determine contributing factors to inefficiencies in the main supply chains, and strategies / policies to lift performance.

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