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Development of logistic services in rail transport

Abstract: Logistics services are an important element of a fast-moving economy and trade between the European Union and Asian countries. The TSL market is developing in Poland, goods transport is growing rapidly, however, the share of rail transport in it is decreasing every year. Customers of the TSL (Transport and Shipping and Logistics) market expect comprehensive logistics services from one partner. Rail transport to recover the part of the roam should expand the scope of services provided and create conditions for the development of intermodal transport, but also such segments of transport as dispersed transport or hazardous materials. In addition to organizational changes, a dedicated reloading infrastructure is an indispensable element of acquiring customers.

Keywords: Logistics services; Transport policy; Terminal service infrastructure; The market for the transport of goods, infrastructure reloading

With the development of societies, there is a growing need for various forms of moving people and goods. It is estimated that in logistics processes about 80% of all logistics functions are various forms of transport. It occurs in the process of warehouse service, during the distribution of goods or delivery of raw material for production. Globalization and far-reaching specialization generate demand for transport services. The share of transport processes in the overall logistics service costs is also significant. Therefore, a very important issue is the use of modern, and at the same time energy-saving transport technologies, whose overall operating costs are relatively low. Unfortunately, transport processes have an impact on our surroundings. Individual transport branches, due to technical and technological conditions, have a different impact on the environment. Technological development creates new possibilities to reduce the harmful impact on the natural environment.

The awareness of economically developed societies in this regard is growing. Environmental protection should be a very important element of sustainable development so that the next generations can leave nature at least in a non-deteriorated condition. Transport is, by its nature, a sphere of economic activity of a systemic character. The utility of transport is all the greater, the stronger and more systemic the links between its various forms, and hence and branches. Transport is one of the main areas of the economy and at the same time a very important element of logistic services. Over the past few decades, transport in the economically developed EU countries has become a largely systematic sector, but existing systems in developing countries are still obsolete and incomplete, which creates the need for a consistent policy of their sustainable development. The geographical location and the development of transport infrastructure have a significant impact on the economic potential.

In our country, the share of rail transport in the transport market has been decreasing for several years. In 2007, it was 19.37% measured by transported weight, which accounted for 290 million tons; At the same time, road transport carried a total of 1213 million tons. In 2017, this share amounted to only 12.04%, which accounted for 239.9 million tons, while road transport in that year transported 1747 million tons of transported mass. A year earlier it was 12.52%, despite that from year to year, intermodal transport increases at an annual average rate of about 15%, the share of rail transport in the goods transport market is decreasing. Last year, their share in the total weight of transported cargo amounted to 6.12% with the average in the European Union 15%. The degree of lack of balance between car and rail transport in cargo transport is shown by the following data published by the Central Statistical Office based on which the growth dynamics for these two modes of transport can be compared.

Table 1. The size of the weight of the suspended goods in millions of tons.

	2017	2016	The difference 2017-2016
Transport in general	2 053,24	1 836,66	216,59
Rail transport	239,50	222,52	16,98
Car transport	1 747,27	1 546,57	200,69

Table 2. Transport work in million tonne-kilometres.

	2017	2016	The difference 2017-2016
Transport in general	434 932	385 678	49 254
Rail transport	54 797	50 650	4 147
Car transport	348 559	303 560	44 999

Source: Own study based on CSO data

They show that only over the last year transport by car increased by more than 200 million tons (i.e. 93% of annual rail transport), while in tons km by 45 000 million tons km (i.e. by 92% of annual transport by rail). For several years, we have been observing a dynamic growth in the share of car transport in the market of carriage of goods. There are many reasons for such a division of the market. After Poland's accession to the European Union, very large financial resources were allocated for the development of transport infrastructure. Social expectations caused that in the first place, these funds were earmarked for the construction of new roads and modernization and extension of existing ones. Transport infrastructure of other branches, such as inland waterway and rail transport, was not developed in this period, but on the contrary - was subject to further significant degradation. The development of car transport was promoted. Since infrastructure in the last decade of the last century is the basic element of the proper functioning of the transport system and in the first decade in Poland, despite the recommendations of the European Union for the sustainable development of individual modes of transport, their development was uneven, in terms of a number of elements, including transport infrastructure and access rates to it. Fees for using the infrastructure are still very unfavorable for railway transport and several times higher per ton of transported cargo, compared to car transport. The European Union recommends that the distribution of funds for the modernization and development of transport infrastructure is in the proportion of 40% for rail transport infrastructure and 60% for the development of road infrastructure. In Poland, the distribution of financial resources for the development of rail transport for many years was in the proportion of 15-17% for rail infrastructure, and the remaining part of the funds was allocated to roads whose condition has

significantly improved. Preferential treatment of car transport in the area of road use charges, there has been a dynamic development of this mode of transport. We have become a powerhouse in the European Union in this area, but it has come at the expense of other transport branches in our country. In the previous financial perspective, the need to allocate more funds for the revitalization of railway infrastructure was started. The current perspective brought significant changes in the approach to the allocation of financial resources. The change in the allocation of resources was caused, among others, by the EU's definite indication of certain priorities in the development of transport branches considered to be less harmful to the natural environment. PLN 67 billion has been allocated to the linear infrastructure of rail transport. Waterway reconstruction programs are under development. In the era of globalization, one of the basic dilemmas faced by the transport and forwarding sector (TSL) is the proper definition of development directions that will not only be consistent with the expectation of a single client, but also with the expectations of the whole society. Transport infrastructure is the backbone of the development of transport and logistics systems. Bearing in mind that road transport is more flexible in customer service because transport units are of smaller capacity and move on incomparably much more extensive transport network of public roads. The total length of roads in Poland is almost 420,000. km, while the railway has only 19,500 km of railway lines. Based on this branch, processes, and logistics services have begun to develop in our country. Storage centers serviced by car transport were created around the cities. Railway transport companies focused on the competitive struggle among themselves for mass transport, unfortunately, they did not develop logistic services and did not build the modern infrastructure necessary to provide these services, which also contributed to further loss of share in the transport market. The right approach to logistics processes determines the need to reduce excessive inventory, unnecessary and irrational transport modes in transport processes and the correct use of all modes of transport so that the global service costs are as low as possible. Large enterprises with significant potential also had to take a new direction into their development strategies, which further expanded their areas of activity, and at the same time forced a different approach to logistics service. Bearing in mind the speed of changes taking place in the supply chains, due to new customer needs in terms of quality and scope of service, an increasingly important technology will be an important element of development. These changes will necessitate the adaptation of participants in the supply processes to new technologies, and also new organizational solutions. Presented directions of logistics development are examples of areas of new trends. In that case, is the turn likely to compete with car transport in building supply chains? In transporting small loads by classical means, certainly, such conditions are not present yet. In addition to mass transport of cargo segments such as coal, construction materials, and chemical materials, transport of intermodal units is an important area of development. The organization of these transports is based mostly on permanent and regular connections, which are monitored on a regular basis, which proves that the railway can effectively fight car transport, provided that the quality of its services is significantly improved and extended to include additional services such as storage. The development of logistics services for rail transport should result in greater use of road transport in the field of transport on the so-called last mile, also in other cargo segments. In order to increase the share of rail in the freight transport market, it is also necessary to develop dispersed transport and hazardous materials. However, in order for these services to develop, a terminal infrastructure dedicated to these cargo segments is needed. In this case, we must also remember the need to offer the widest possible logistic service. In the strategic plans of transport companies, we must assume that the development of transport is possible thanks to investments, and thus both through the modernization of existing infrastructure and the construction of new infrastructure facilities dedicated to specific cargo segments. Considering long periods of infrastructure construction

and high construction costs, Infrastructure development should precede the development of transport in relation to the needs, and thus overtake transport needs, especially as regards infrastructure dedicated to specialist transport. We should prepare some development assumptions today, bearing in mind the new financial perspective and the priorities in the area of spending aid funds. The development of logistics services in rail transport is related to the need for the integrators of these services because there is a relatively large fragmentation of the services offered by railway transport companies and providing services around transport, e.g. reloading services, storage, etc. Good examples are the standardization and unification of cargo units, the development of new transshipment technologies, operators organizing and managing comprehensive supply chains, as well as the codification of railway lines for combined transport. In this cargo segment, the railway wins a competitive battle with road transport. New solutions in this area are still being sought for, and are being developed, among others new wagon structures, as well as new technologies and new organizations, are introduced for this type of transport. The phenomenon of consolidation, integration and the creation of a logistics network that allows the use of partners' resources, joint implementation of projects and the use of synergy effects is to be more and more often indicated in the practice of rail freight transport. The complexity of services in building supply chains is a very important element in terms of quality and level of customer service as well as the choice of a service provider.

One of the directions for the development of rail freight is the provision of services in a networked system. Bearing in mind that the logistics network is a group of operating companies or modal points (in the case of rail logistics support infrastructure) in a specific space and cooperating, gathering a number of supply chains in order to achieve high efficiency and efficiency of goods flow in accordance with the requirements of customers. Companies operating in a network system should work for the success of the entire network. In the case of rail transport, these companies perform a basic service, which is transport and accompanying services, such as reloading, storage, sorting, confectioning. However, building an organization functioning in a network system requires proper adaptation of point infrastructure (modern terminals) and linear infrastructure as well as equipping it with IT support tools. The platform of mutual cooperation thus created can take effective competition for the client with road transport. When creating a logistics platform, the most difficult task seems to be to overcome the concerns of its participants, e.g. in the area of protecting their information, direct contacts with the final customer, or providing prices of services provided; Of course, there can be more such areas.

The National Board of the Association of Civil Engineers and Technicians of the Republic of Poland jointly with the Faculty of Management and Economics of Services at the University of Szczecin intends to organize in June 2019:

3rd Edition of the scientific and technical conference:
"Intermodal Transport - Integration of World Transports",

3rd Intermodal Transport Fair
„*InterModal2019*” ,

For several years, the Association has been actively involved in promoting intermodal transport in our country. In Poland, no space has been created for presenting innovative solutions addressed to this market, which from the perspective of modern technologies is very interesting. The subject of intermodal transport is very wide are new areas that need to be

developed, among other things, support activities are needed to encourage greater containerization of goods.

Association in June this year organizes at the University of Szczecin a conference combined with intermodal trade fairs InterModal 2019, which slogan is innovation, interoperability, and intermodality. They will become an important event for this industry and beyond. Assumptions in the development strategy of the Port of Szczecin Świnoujście in the field of container reloading are large. Construction of a new deepwater wharf and intermodal terminal in Świnoujście will affect the distribution of cargo streams. The fair and conference will be organized in a new formula and in a new place.

For those interested, study visits will also be organized in companies associated with the logistics industry.

We invite everyone to participate in this event. We hope that the conference and exhibition exposition will contribute to giving a new development impulse in this part of our coast in the scope of development of intermodal transport.