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THREATS AND OPPORTUNITIES FOR DEVELOPING THE MARKET OF OVERSIZE TRANSPORT

JOY AND SORROW OF POLISH OVERSIZE CARRIERS

The level of demand for transport services is directly proportional to the economic situation in the market and at the same time it is an important factor strengthening the positive development trends of the economy. Civilization development based on modern technologies is the main factor determining the creation of large industrial, infrastructure, commercial, sports and energy facilities, etc., whose sizes force the use of oversize elements.

The location of the object in relation to the place of its manufacturing requires the transportation of both domestic and increasingly international services on a continental or global scale. The increase in the number of oversize loads caused the specialization of individual transport companies and the construction of the technical infrastructure to handle such types of transport. Transport of oversize loads is an elitist and relatively narrow segment on the transport market. It is a service-specific business in which management processes are affected by micro and macroeconomic phenomena, hence the demand for oversize traffic is a kind of barometer that signals the market condition.

Each order of oversize cargo transport requires individual logistics preparation.

Effective management of current and long-term activities in the oversize cargo sector, in the face of a recession or a potential economic crisis, is a serious challenge. Lack of long-term sustainability in the area of economic activity resulting, for example, from the conservative attitude of the banking sector on granting credits, causes delays, temporary abandonments, and often even the abandonment of large investments which are the source of a significant number of transport orders. The consequence of such a sensitive position is the very positive feeling of positive and negative effects of all kinds of economic, financial, political and social phenomena.

Milestones of Polish oversize transport services

The beginning of the 90s of the twentieth century is a period of radical political and systemic changes in the countries of Central and Eastern Europe. The consequence of these processes was the introduction of free market rules and domination of supply over demand in road transport. The emergence of a very large group of small private transport companies has triggered the fight for the customer and the price competition for services.

Poland's accession to the European Union in 2004 radically changed trends in the transport market. The sector performing oversize transport on the domestic and international market, supported by modern logistics and forwarding services over the years, was successfully restructured. The means of transport have been exchanged and the organization of the activity has been modified to a level comparable with the standards in force in the European Union. The global financial crisis and the crisis in the euro area in 2008-2009 have hampered the upward trend, reducing the volume of transport and changing their directions and structures. The oversize transport sector functioned at that time not only in terms of strong international competition but also forced to act on the basis of legislation not in line with the rules of the modern market. After several years of legislative work, from 19th October 2012, according to the new law, authorizations for seven exceeding categories began to apply. This affected both the orderliness of the market by reducing the waiting time for issuing decisions, the introduction of periodic approvals and the change in financial charges in the form of license fees and penalties for breaching. The electronic toll collection system (viaTOLL) which since July 9, 2017 has already covered 3660 km of national roads, express roads and highways, is managed by the General Directorate for National Roads and Highways (GDDKiA).

Further amendments to the transport law generally hinder the activity of transport companies. The European Union Regulation 2016/403 of March 18, 2016 unified the way the imposition and calculation of penalties for infringements of driver's working time, total weight or vehicle dimensions. The unfavorable changes proposed in July 2017 assume that in the extreme case it will be possible to impose on the carrier as many as four types of penalties: for non-approval, for exceeding the maximum permissible mass, for exceeding the width and for exceeding the length of the vehicle.

Every carriage is an individual project

The oversize transport, due to its specificity and market demand, is a complex logistics, forwarding and transport service, requiring a number of organizational tasks – obtaining permits, using modern and specialized loading, unloading and transport equipment and specialized personnel who prepares, supervises, provides technical support on the route during the carriage. In market practice, each order for the transport of oversize cargo requires individual logistics preparation which takes into account the type of cargo and the route of carriage. Individual orders require different workloads but generally the preparation of transportation is difficult and time consuming, and therefore generates high costs that must be taken into account when calculating service charges.

DIFFICULTIES IN THE DEVELOPMENT OF THE OVERSIZE TRANSPORT INDUSTRY

- lack of an electronic database of current parameters of roads, bridges and viaducts through which the oversize load transport is planned;
- limitations for travel time of oversize transport sets for night time only - from 10:00 p.m. to 6: 00 a.m.;
- the lack of a nationwide registration system including oversize transport projects that would offer interested parties the opportunity to post information on when and where such a transport project would take place which would make this market segment transparent.

The specific nature of the transport of oversize loads means that the entry of new entrants into the market requires the fulfillment of a number of conditions:

- purchase specialized and usually very expensive means of transport,
- employment of highly qualified professional staff,
- know-how of professional route preparation and logistical support for vehicle travel (convoy),
- the need to obtain the necessary permits for the service.

The limitations on the ability to carry very heavy and / or large loads resulting from the technical capabilities of transport equipment are solved by companies using increasingly modern transport sets, while a significant problem completely independent of the service providers is the technical condition of the national road infrastructure.

Estimating the market size is difficult

Work carried out when moving oversize loads under national conditions is not subject to detailed quantitative records. The categories of goods included in the Central Statistical Office summaries do not include oversize loads, as a separate item, as they are not possible to illustrate and analyze their total tonnage. The size of the oversize transport market can be characterized by the number of annual permits issued or orders executed. The structure of the domestic market per year is as follows:

- over a dozen thousand road transport operations,
- several hundred orders in rail and maritime transport,
- dozens of orders in inland waterway transport,
- single orders in air transport.

The possibility of carrying oversize carriage of one of the five transport branches does not prejudge the existence of direct competition between them in national conditions. Each of the branches, due to the specificity of the used means and their carrying capacity (transport sets: tractor and semitrailer, railway platforms, ships, barges, airplanes) and infrastructural equipment with different capacity and load capacity can be dedicated to another group of potential cargos. With the right market service strategy, it is possible to gain competitive advantage by offering to a potential recipient comprehensive logistics and logistics services with two transport sectors. Road transport, as the only one in the industry, has a very important advantage over other modes of transport in the form of extended linear and point-to-point infrastructure. In practice, this allows direct access to almost any place for loading and unloading at the destination. High flexibility in terms of service delivery reduces the time and costs of service execution.

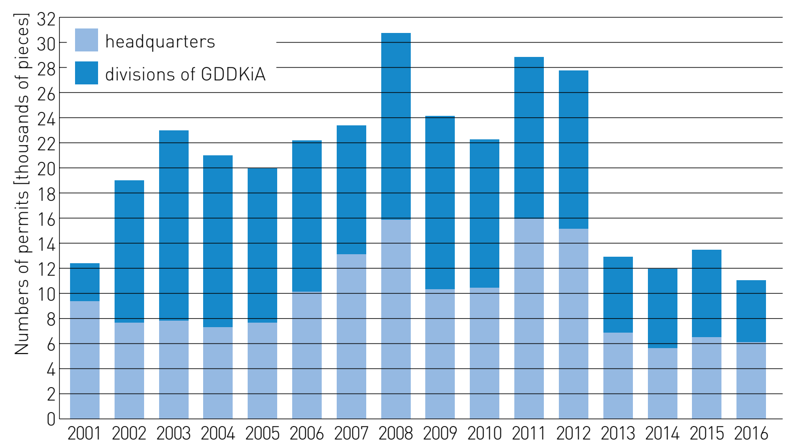
European environment

In the implementation of oversize transport, the assumption of the volume of transport work that can be done on a yearly basis is particularly difficult, as many orders are one-time. The problem is also empty mileages due to the necessity of providing the transport set from the company for loading and the difficulty of obtaining appropriate orders for the carriage of cargo between the places of unloading and the reloading point. The policy of regulating and developing the transport industry in the EU is, on the one hand, regarded as one of the pillars of the existence of a common market with the free movement of goods. On the other hand, there is a strong impact on the interests of the transport industries of the Member States. The domestic transport market, including the oversize one, is cyclically subject to numerous influences and pressures, among others: charges for German motorways (MAUT), minimum wage rules (MiLoG), and rules on working time and rest. On 31st May 2017, the European Commission adopted the first of two packages containing proposals for 8 EU transport regulations: *Europe on the Move: Commission on action for clean, competitive and connected mobility.* The common denominator of these types of activities is the reduction of competitive advantage of national carriers in the individual areas.

The economy fluctuations

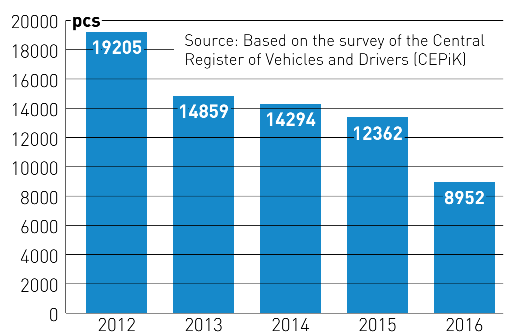
The image of the national oversize transport sector illustrates the number of permits issued for oversized transport by the General Directorate for National Roads and Highways (GDDKiA) and its subordinate divisions in the years 2001-2016. In 2001, 12.468 permits were issued, 18977 in 2002 and 22.952 in 2003. The acceleration of economic investment before the accession of Poland to the EU generated an increase in demand over three years by as much as 83.9%. The economic climate over the next five years has allowed to keep the number of issued permits at the level of 20000 per year and set a record of 30.721 in 2008. The global economic crisis which caused economic decline hitting major investments as first. In 2009, 24.164 permits were granted, and 22.246 in 2010, so there was decrease by 21.3% and 27.6%, respectively. The implementation of construction investments related to the creation of sports stadiums for the UEFA EURO 2012 European Football Championship and the construction of highways and express roads to handle this sporting event generated an increase in the demand for transport, mainly of large construction machines and steel constructions. There was a significant increase in the number of issued permits: 28.795 permits in 2011 and 27.725 permits in 2012. The completion of infrastructural works financed by European funds had a significant impact on the reduction of the number of permits by 53.3%. in 2013 (12.947) and further decline in 2014 (11.983). In 2015 there was a slight increase,

Numbers of issued permits for oversize transport projects [pcs]

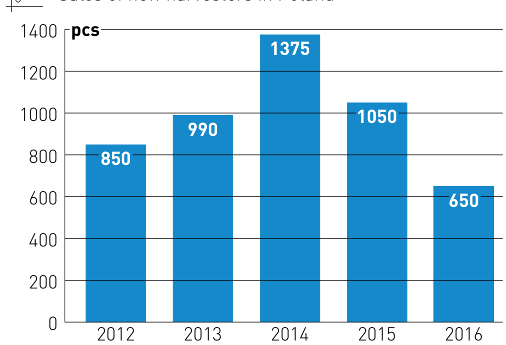


Source: Based on the survey of the General Directorate for National Roads and Highways (GDDKiA)

Sales of new tractors in Poland



Sales of new harvesters in Poland



Source: Based on press data

13.498 permits were issued and in 2016, another decrease to 11.110 permits.

A fragment of the market that generates demand in thousands of transport projects per year is the sector of agricultural tractors and harvesters. This demand was broadly based on programs financed by the European Union in subsequent editions:

Polish leaders of oversize transport are a group of several dozen transport companies, operating according to international standards, using the European transport equipment of the highest quality.

2004-2006 and 2007-2013. The end of these programs and changing the formula for finalizing the purchase of vehicles and machines on farms means a reduction in the potential market by more than 50% and no chance of such a high demand again.

In the country, the large number of permits have been issued in recent years due to the construction of several thousand wind turbines of different technical parameters (height from several dozen m to 210 m). The transport of individual components of wind installations: towers, generators and rotor blades, was a significant group among the executed orders – especially on the coast and the center of the country. It should be assumed that this is a segment of the market that generated only a temporary increase in demand based on favorable legislative solutions in the area of renewable energy. The amendment to the Renewable Energy Act of 2016 introduced unfavorable conditions, including the provision of a minimum distance for wind power plants from residential and protected areas, the issuing of building permits, the level of taxation and green certificates financing, what, with high probability, will significantly reduce the number of new investments.

What is transported by "oversize" carriers?

The problem for carriers of oversize loads is the load individual nature in different categories. Among the transport orders, there are different categories:

- categories that dominate quantitatively:
  - heavy construction machinery – dumpers and excavators for working in open pit mines, tunnel and road building machines, road milling machines, grinders, screening plants;
  - agricultural machinery – harvesters, tractors;
  - wind installations – tower segments, generators, rotor blades, hybrid towers;
- occurring cyclically:
  - industrial equipment – transformers, generators, turbines, ovens, boilers, installation and piping components;
  - construction elements – steel and concrete structures;
  - technological lines for the automotive, chemical, food, brewery, metallurgical, cement and refinery industries ;.
  - crane systems – cranes, crane weights, crane construction components;
- occurring sporadically:
  - machines and systems for transport and grinding – the demolition and recycling industry;
  - rail vehicles – trams, locomotives, wagons;
  - forestry machines – harvesters, self-loading conveyors;
  - components for the shipbuilding industry – steel structures, motors, shafts, propellers, hull sections, superstructures, hatch covers;
  - hoisting vehicles – self-propelled platforms, large forklift trucks;
  - military vehicles – tanks, armored transporters;
  - metallurgical products
- orders that are unprecedented:
  - large boats, yachts, planes, monuments;
  - bridge elements – spans, girders.

Different categories of cargo occur on the market in very different quantitative terms and time structures throughout the year and are additionally conditioned by processes that are transnational in nature, e.g. grants under EU programs or subject to significant changes in the light of legal changes.

Barriers to development of oversize transport

Any type of limitation resulting from the technical parameters of the equipment and the road and point-to-point infrastructure in the market practice makes it difficult and time-consuming to prepare for the carriage and, in extreme cases, makes it impossible to do so. The national road network, i.e. all municipal and county roads and a part of voivodship ones, is not adapted to carry vehicles with a permissible single drive axle load of up to 11.5 t. The combination of road classes in the national system is not conducive to oversize transport and the technical parameters of various engineering objects (bridges, viaducts) in the case of route planning constitute an important or even critical limitation, excluding its implementation. Existing bans cause, in many cases, the need to travel with a load much longer than the optimal route. Existing points of infrastructure in many cases do not take into account the necessary maneuver space for oversize load vehicles. The lack of such facilities necessitates adaptation works on bridges and intersections, and then restoring their original state. These are activities that lengthen the transport and generate costs as a result of the workload. A change in the construction of e.g. new intersections with circular traffic to enable smooth running of oversize vehicles (lack of concrete structures, earth embankments, high curbs, easy dismantling and installation of road signs at intersections, center roundabout) is a chance for efficient transport execution.

The domestic market of oversize carriage has a varied structure. Large companies carrying non-standard loads will look for competitive advantage in:

- wide service offerings,
- creation of dedicated transport modules,
- specialization in handling particular categories of cargo,
- serving the "heaviest" market segment,
- handling untypical and particularly difficult jobs.

Market leaders are companies that have the appropriate certificates to carry out comprehensive transport services both within the country and in the European and Asian countries. These are companies that have knowledge, experience and skills; they can carry oversize loads in each weight category and size under the applicable regulations. A group of several dozen transport companies, operating according to international standards, use the highest class of European transport equipment for this purpose.

The remaining part of the oversize transport market consists of several hundred entities which handle orders for lower weight categories and oversize volume sizes.

The national road network, i.e. all municipal and county roads and the part of voivodship roads, is not adapted for the purpose of moving the vehicles with the permissible load of a single driving axle up to 11.5 t.

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