

# THE DEVELOPMENT AND PERSPECTIVES OF LOGISTICS CENTRES IN LITHUANIA

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## 1. INTRODUCTION

Logistics centre (LC) is a centre to all companies that participate in activities related to transport and logistics in the broadest meaning. LC provides the collective equipment needed to develop these activities and has common services for the companies installed there. Together with the values of location and centrality, Logistics centre provides quality service and effective selection of the most efficient means of transportation due to its truly multi-modal transport possibilities. LC offers real flexibility to adapt to companies needs as well as the development of specialized services with shared costs in a favourable setting for business activity and with the support of the large investment made in infrastructures [6].

Currently, the Logistics centre (LC sometimes called freight village) is realized as an “integrator” of various transport modes, able to promote intermodal transport. The Logistics centre is mainly an intermodal terminal, which is the primary component of the intermodal transport chain, constituting the node where the transshipment of goods from one mode to the other takes place. There is a consensus in definitions that intermodal transport constitutes a transport process in which at least two of the following conditions are fulfilled:

Two or more different transport modes (lorry, train, barge, ship, planes) are deployed.

The goods remain in one and the same transport load unit for the entire journey.

Due to their nature of operations, they provide integration at a local or interregional level, depending on the modes served and the purposes conformed by the type of freight handled.

Local integration of intermodal transport differs between maritime regions and densely populated inland and/or sea regions. Maritime terminal regions are interfaces between container vessel operation on one side and inland modes such, as mainly road and rail [3,7]. On the other hand, the Logistics centre organization is interrelated to intermodal transport chain structure, and especially to the types of markets served, as well as transport modes and respective volumes.

In any case a Logistics centre is part of an integrated transport chain that the shipper (customer of the LC) develops and operates and as such it comprises terminals and rail/maritime transport segments as well as the initial and final segments done in most (if not all) cases by road transport [4]

However, the potential customer of LC, evaluate whether such integrated transport chain produces cost savings, enhances reliability, decreases transit times and improves quality. Therefore, the customer is the real decision maker for the operators and the others are merely executing the orders.

Hence, the concept of Logistics centre is developed to offer “common” services to various transport and logistics companies located within its site, as well as to other external users. Transport and logistics companies can take advantage from the common infrastructure, equipment and services, without proceeding to heavy and risky investments if they had to choose the “individual” use. The latter requires that they develop and use a freight centre/village for only their own products, not accepting third parties, and thus exhibiting low or possibly unattainable positive returns. Thus, modern Logistics centre must be perceived as commercial enterprises offering comprehensive transport services to companies rather than as simple infrastructure projects facilitating the single companies' location.

## 2. THE POSSIBLE CATEGORIZATION OF A LOGISTICS CENTRE

Despite the widespread use of the term logistics centre there seems to be, to some extent, great variation in the definition of the term. This is partly an outcome of the evolution process and new types of centres that have been developed in recent years, some of these centres may have characteristics, which do not always correspond to all typical features of what has been understood as a logistics centre. Partly the variation is a result of the fact that, by absolute terms, a logistics centre is very difficult to define [5]. There are useful and detailed definitions for certain types of logistics centres describing their functions, but the creation of an overall definition of a logistics centre has proved to be problematic. Therefore, it is common that instead of using a general definition we rather describe different types of logistics centres.

From a functional point of view, logistics centres can be defined simply as concentration points of logistics flows and operations at any scope; a logistics centre is a node that concentrates traffic flows. In broader terms, a logistics centre can be defined as a centre in a particular area, within which various operators and companies on commercial basis carry out all activities relating to transport, logistics and distribution. However, the geographical scope of, for instance, actions and the internal uniformity of a centre are features that divide logistics centres into various types making general definitions problematic. The geographical dimension of a logistics centre can be anything between local and global. Internal uniformity of a logistics centre has two extremities: a concrete logistics centre, which is very coherent and operates in a same physical space, and a virtual logistics centre that consists of several logistics service providers and their facilities in a region. A categorization of a logistics centre can be made in numerous ways. Typically, three basic types are as follows:

- **Concrete (physical)**
- **Virtual**
- **Network (sometimes also referred to as regional).**

A concrete logistics centre may be operated and owned by several logistics service providers or just by one. For example, some companies in the field of logistics, such as land transport companies and forwarders, quite often have their own distribution centres referred to as logistics centres. These centres serve the needs and transmit flows of a single company and are also owned by and only by a single company. Multiple companies providing a wide range of logistics and value added services to their customers operate some of the concrete centres. The operators can either be owners or tenants of buildings and facilities.

A company operating a concrete logistics centre might play a different role in the delivery chain of its customers. Only a minor part of companies offering logistics services take care of all logistics activities of their customers. Nonetheless, customers buy willingly services they need from the specialized service companies. For this reasons it is an advantage to a logistics centre to be able to provide a wide range of specialized services within the same centre. A concrete logistics centre is usually a company that clearly practices its own business activities, and whose activities support the needs of the largest logistics service provider in the logistics centre. A concrete logistics centre can also be equipped with all public facilities needed to carry out the above-mentioned operations. If possible, it should include public services for the staff and equipment for the users. Usually a concrete centre serves as a multimodal centre linking together different transport modes.

**A virtual logistics centre** is usually a certain type of rainbow organization, which can support its member organizations in marketing, for example, but does not participate actively in actual logistics operations. Where the legal status of a concrete logistics centre is typically a company, a looser organizational body such as an association may manage a virtual logistics centre, or it can even operate on a project base.

Along with the two perhaps most common types of logistics centres the third type of a centre can be specified: **a network**. A network is an entity of several logistics centres or service companies. A network logistics centre supposes relatively effective co-operation between several private companies, and possibly several individual logistics or distribution centres, which might be located within a larger geographical area (town, city, group of cities, region etc.). These companies seek mainly synergy benefits through co-operation. A network promotes services of all its members, not only of a single physical centre. A network is usually formally less organized than a concrete centre in terms of rules, and organizational and legal status. Sometimes network has no company to manage its

activities but only a loose co-operational body. Virtual centres sometimes share similar characteristics to networks, which is the case in Finland, for example.

*The main differences between concrete, virtual and network logistics centres* are sometimes measured by the internal uniformity (referring to organizational mode, aims, facilities, role of different partners etc.). From that perspective, concrete and virtual logistics centres are seen as extremities whereas network is positioned between them. A virtual centre is considered a loose co-operational organization between companies that mostly promotes and markets their services. A network is characterized by stronger links and modes of co-operation between companies. Companies provide their services through their own facilities but seek for synergy benefits through close co-operation. A concrete centre has its own operational facility (infrastructure) and is most often a private limited company.

*The difference between a virtual logistics centre and a network is*, therefore, not a portal or services provided through the Internet but the depth of co-operation and the mode of the centre's organization.

Another perspective is also to understand the three types of logistics centres as development stages of a single centre. During a certain period of time a logistics centre may develop from the looser virtual mode first to a network and then finally to a concrete centre.

Distinguishing between various types of logistics centres in practice is not unproblematic. Many centres share similar features with each other, thus, making a clear definition difficult. Many centres also have similarities with organizations that are not used to being referred to as logistics centres. For example, networks and virtual logistics centres tend to share many similar characteristics with purely regional marketing and development organizations promoting logistics advantages of a region.

At the moment we don't have the Logistics centres (nor physical, nor virtual, nor network) in Lithuania, because the Logistics centre can not develop easily, it requires a lot of effort. But we have an idea to create the several physical Logistics centres, which will be located in Vilnius, Klaipeda, Kaunas and Panevezys.

### **3. THE STRATEGIC ESTABLISHMENT PLACE OF LOGISTICS CENTRE IN LITHUANIA**

Usually the Logistics centres are focused on international markets. On one hand they aim at collecting international transport flows and gain economically from the increased logistics activities in the region. On the other hand, most of the logistics centres analysed here share the strategy of attracting new businesses to the region by strengthening the logistics services and the logistics sector in general in the region.

Bearing this in mind, it is no surprise why logistics centres tends to be located along the major international transport corridors. Transport volumes are the largest along these corridors and the location in the interchange of different transport modes/corridors is the most favourable to a logistics centres.

#### **3.1. Klaipeda Logistics Centre**

Klaipeda region has well-developed transport links. It is the only county on the coast of Lithuania providing a sea connection to the whole country. Major sea routes extensive rail and road networks and also crude oil product pipelines serves the area. Transport infrastructure offers competitive advantage for the logistics centres because of the developed combination of provided three modes. Being an important transit node of the transport corridor IX B, Klaipeda has good road and railway connection with the major industrial cities, with Belarus, CIS and CEE countries. Considerable numbers of regular ship lines are operating between the ice-free Klaipeda seaport and the seaports of Baltic Sea region, Western Europe, America and through Trans Siberian Main Line to South-East Asia. Intensive transit cargo flows between East-West trading partners through the Klaipeda seaport make the region attractive for domestic and foreign investments. The nearest airport is the Palanga airport locating North to Klaipeda. Strengths of Klaipeda are the location near the sea and in the transport corridor IX branch B and also the Palanga airport is located near Klaipeda [1].

In the Klaipeda regional development plan logistics centre is highlighted as one of the first priorities. Feasibility studies have been made, and analysis of special conditions and business opportunities for new economic infrastructure and services in relation to the logistics centre as well as land plot analysis resulting in a suitable land area for the logistics centre shall be carried out. Technical assistance to development of the legal agreement forms and activities for participation in the logistics centre will be provided. Marketing and awareness raising activities shall be carried out. Financial commitments for the investments in the logistics centre shall be established. Agreements with transport and logistics companies, service providers and other users of the centre shall be concluded.

The evaluation procedure has shown, that the best qualification for the Klaipeda logistics centre is the location in the south of Klaipeda city. The location in the south of Klaipeda was considered optimal for future development of this state as a part of transport corridor IX B.

### 3.2. Kaunas Logistics Centre

The Kaunas County is located in the central Lithuania on the transport corridor I, on the crossroads of the Via Baltica route and the transport corridor IX branches B and D. It is one of the largest industrial centres where in the intersection of I and IX international transport corridors cargo flows from North to South and East to West meet. The region of Kaunas makes a great contribution to the total economy of the country. The city of Kaunas is the region's centre locating the confluence of the two largest navigable rivers of Lithuania. The river port is located in Kaunas. It is a TEN port and a TEN waterway goes along the river of Nemunas to Klaipeda. There is also a busy airport in Kaunas.

The Kaunas Logistics Centre is in a very early stage of development, too. Depending on the traffic volume and commodities, the plan to establish the Kaunas Logistics Centre should be carried out in several phases. It should be put into operation by the completion of the planned new European standard gauge railway line from the Polish border to Kaunas. This would mean that the gauge change from the European Standard Gauge to the existing wide gauge and vice versa would be made in Kaunas [1].

The alternative locations for the Kaunas Logistics Centre have been evaluated according to the following key characteristics:

- Location in relation to the Polish frontier and to Kaunas;
- Size of the proposed area; distances to major and minor settlements;
- Topography, present land-use and surface drainage;
- Service infrastructure;
- Location in relation to the proposed European standard-gauge railway, to the existing wide-gauge railway and to the present or improved Via Baltica and the potential for further site expansion.

The probable location of the centre will be Mauruciai. Nevertheless, the discussions about the location of Kaunas logistics centre are still going on.

### 3.3. Vilnius Logistics Centre

Vilnius is located at the South East side of the country and it lies at the crossroads of four important main roads. The country is located in the transport corridor IX at the branch B. The road traffic is heaviest to the direction of Klaipeda. In Vilnius is located the largest airport in Lithuania which is concentrated mainly to the international traffic. The distance between Vilnius and the border of Belarus is only 30 kilometres. There are seven railway stations in the city of Vilnius and international trains leaves Vilnius to several directions. The nearest seaport is Klaipeda, which is located 319 kilometres west of Vilnius [1].

Vilnius, the capital of Lithuania, is one of the most active business centres of the country. Positive changes have been observed in the economy of the city: the services sector has shown fast growth. During the recent decade, the proportion of the population working in the services industry increased to 68% of the total working population in the city. The industrial sector of Vilnius has been modernized. The rapid economic growth of Vilnius is caused mainly by foreign direct investment.

The Vilnius Logistics Centre, which would be located between Vilnius and the Belarus boarder, would solve the traffic congestions in Vilnius and in the region surrounding the city. On the other hand, Vilnius opens huge possibilities for a logistics centre, as it is one of the most active business centres of the country.

### 3.4. Panevezys Logistics Centre

Panevezys is situated half way from Vilnius to Riga. It is located on the motorway Via Baltica on the Pan-European transport corridor number I and on the railway branch Panevezys-Radviliskis leading to the Pan-European rail transport corridor number IX B.

Panevezys, the fifth biggest city in Lithuania with 119 000 inhabitants, is situated halfway from Vilnius to Riga. The city has favourable potential for a strategic logistics node in the northeastern part of Lithuania. The priorities of the City of Panevezys, stated in the Development Priorities for 2013, include the development of a logistics centre, strengthening administrative capacities and the development of future-oriented businesses and advanced IT technologies [1].

## 4. THE PERSPECTIVES OF LOGISTICS CENTRES IN LITHUANIA

A definition of “Freight Village” ((LC) sometimes called freight village) is as follows:

“A freight village is a defined area within which all activities relating to transport, logistics and the distribution of goods, both for national and international transit, are carried out by various operators. These operators can either be owners or tenants of buildings and facilities (warehouses, break-bulk centres, storage areas, offices, car parks, etc.) that have been built there. Also in order to comply with free competition rules, a freight village must allow access to all companies involved in the activities set out above. A freight village must also be equipped with all the public facilities to carry out the above-mentioned operations. If possible, it should also include public services for the staff and equipment of the users. In order to encourage intermodal transport for the handling of goods, a freight village must preferably be served by a multiplicity of transport modes (road, rail, deep sea, inland waterway, air). Finally, it is imperative that a freight village be run by a single body, either public or private”[6].

Also, as shows the analyses of experience of some Logistics centres, one of the important functions increasing the attraction of the region and boosting its industrial and business activities. This is based on the fact that logistics play a major role in planning the location of any company [5]. Establishment of new companies or relocating existing ones is highly dependent on the general economical situation and the development possibilities of a company. Companies are naturally more eager to invest in new areas at the time when the economical prospects are good. This in turn affects the success of logistics centres. The development of the regional economy can therefore be seen as a planning challenge for logistics centres.

We intend that the Logistics Centres help to develop (infrastructure, business, economical aspects) these areas where it's be establishment.

## 5. CONCLUSION

The logistics centres can be defined simply as concentration points of logistics flows and operations at any scope; a logistics centre is a node that concentrates traffic flows. In broader terms, a logistics centre can be defined as a centre in a particular area, within which various operators and companies on commercial basis carry out all activities relating to transport, logistics and distribution.

The geographical dimension of a logistics centre can be anything between local and global. Internal uniformity of a logistics centre has two extremities: a concrete logistics centre, which is very coherent and operates in a same physical space, and a virtual logistics centre that consists of several logistics service providers and their facilities in a region. A categorization of a logistics centre can be made in numerous ways. Typically, three basic types are: concrete (physical), virtual, network (sometimes also referred to as regional).

The analysis of development of Logistics Centres shows that these Centres play an important role for the future development of the freight transport and for the economic development of the areas in which they are located. Also the analysis has shown that the logistic synergies developed in the LC are a key factor for the improvement of intermodal transport; the integration of the intermodal terminal into the LC, the proximity of different transport and logistic activities and the services.

The crucial characteristics for establishment of Logistics Centre with European and regional importances are: location at a TEN corridors, high-class motorway and railway, network cooperation, large span of activities, considerable volume of distribution.

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