

## A SAMPLE MODEL OF A LOGISTICS CENTRE AND THE PLAN OF ITS STAGES OF DESIGN FROM BOTH A SUBJECTIVE AND OBJECTIVE APPROACH

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### **Abstract**

*A logistics centre is a spacious area with appropriate organization and infrastructure allowing various independent entrepreneurs to perform actions on the cargo flow, related to its storage and movement between senders and receivers, including support services for intermodal transport and performing tasks with the resources used for these purposes. Any model of cooperation between enterprises involved in the design and implementation of set goals and the investment in a logistics centre includes a number of common stages, with the exception of the initial phases of cooperation. The stages of the implementation of cooperation include planning the scope of work, negotiation and the signing of the agreement, implementation and its associated supervision, continuation and finally modification or termination of cooperation. In this article, the various stages of cooperation of companies participating in this project are analysed individually. General scheme of the planning area and equipment, a model of the design, the planning phase of the logistics centre; the stage of implementation and control and stage of summarizing cooperation; the location of logistics centres from a micro-spatial aspects are presented in the paper.*

**Keywords:** *transport, partnership, implementation of the stages of cooperation, the functions of logistics centres*

A logistics centre – in a formal-legal, organisational and technical sense, a separate site, where there is a concentrated localisation of infra- and super structural facilities of TSL sector enterprises and other specialties. It is a logistics site of complex nature, also consisting of an openly accessible internal and external infra- and superstructure (in the form of a connection to a national logistics network, providing access to the infrastructure of at least two modes of transport). A logistics centre is also defined as a spacious area with appropriate organization and infrastructure allowing various independent entrepreneurs to perform actions on the cargo flow, related to its storage and movement between senders and receivers, including support services for intermodal transport and performing tasks with the resources used for these purposes. [1]

According to T. Nobel, logistics centres are sites occupying large areas of land. The following are distinguished:

- a focused logistics centre – sizes span from a range of a few to several hundred hectares,
- a scattered logistics centre – each of its modules is usually the size of a few to a few tens of hectares [2].

### **1. The area of the logistics centre**

The area in which the logistics centre site is located should be completely separate, both in a formal-legal sense, and technically. It should have a regulated ownership situation and should also be marked and fenced. The basis for the decision to invest in a given location is the area of optimum size suitable for the realization of the investment in technical terms consistent with the zone development plan. The diagram below shows the phase of planning the site and equipping the logistics centre [3].

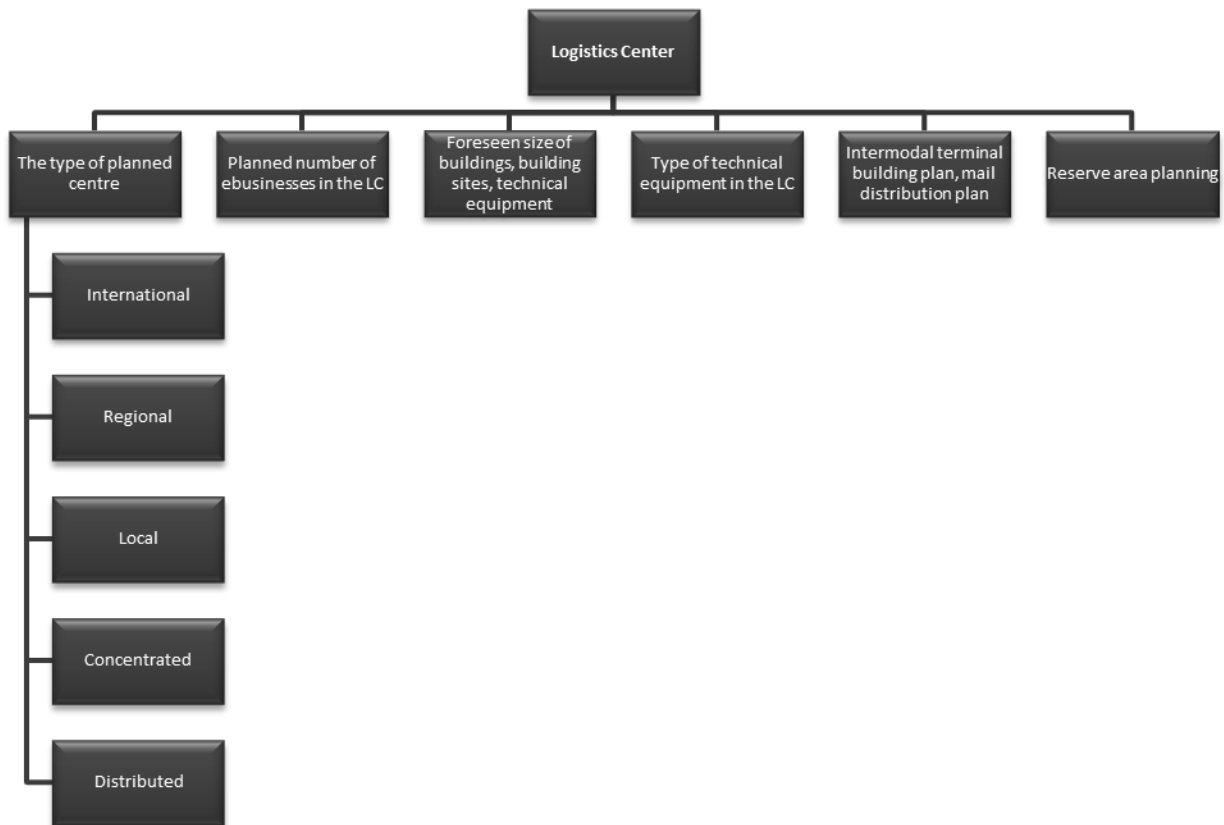


Fig. 1. General scheme of the planning area and equipment of a logistics centre [4]

## 2. The location of the logistics centre

The location of a logistics centre can be considered as divided into the following:

- Its general location (macrospatial),
- Its specific location (microspatial) [5].

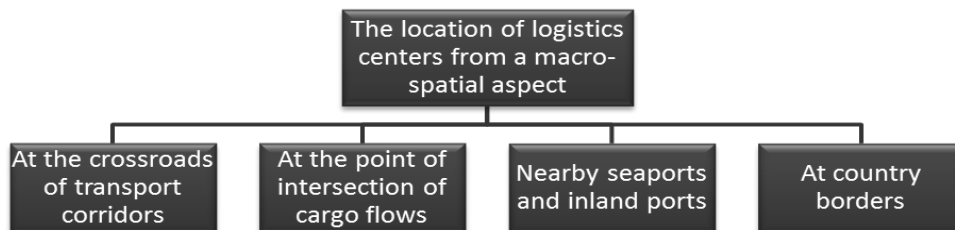


Fig. 2. The location of logistics centres from a macro-spatial aspect [6]

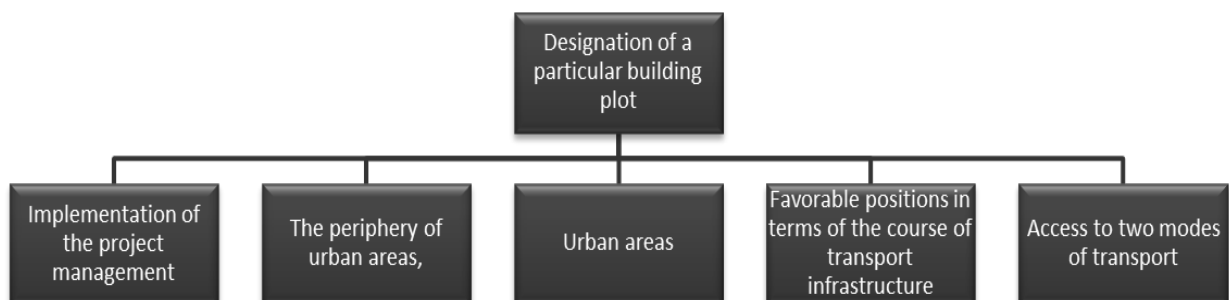


Fig. 3. The location of logistics centres from a micro-spatial aspect [7]

### 3. A sample model of a logistics centre and the plan of its stages of design from both a subjective and objective approach

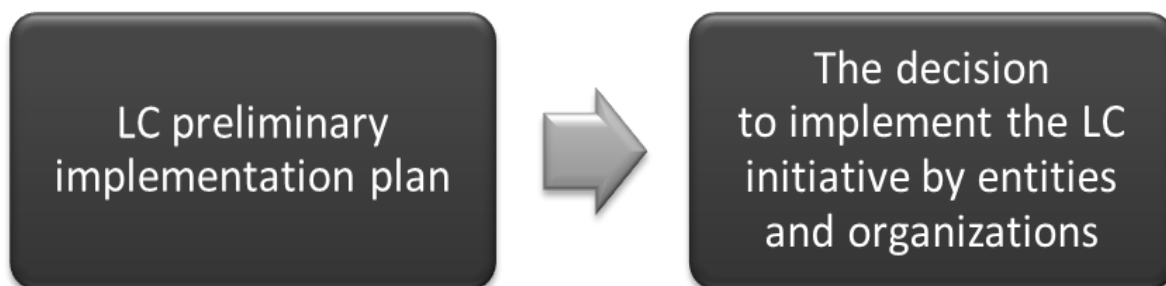


*Fig. 4. A model of the design of a logistics centre*

#### 3.1. The logistics centre planning phase

In literature, the term “planning” refers to the first suggestions and plans as well as projects related to the implementation of the creation of a logistics centre. Planning and implementation of such an investment associated with a logistics centre is a joint venture between the public authorities, businesses and various organizations. These include public authorities at the provincial, district and municipal levels, seaports, inland waterways and research institutes promoting innovative solutions in the field of transport and logistics infrastructure, the environment of local entrepreneurs in the TSL industry, chambers of trade and commerce. When planning a new logistics centre at any location, it is primarily necessary to carry out market research and analysis in the field of:

- evaluation of the existing and potential demand for the services offered by the logistics centre,
- the level of development and the structure of the labour market,
- the costs of labour,
- the possibility of such cooperation. E.g. in the exchange of goods with other logistics centres in the country and abroad,
- financial support under EU funds,
- obtaining national financial aid for the implementation of the investment,
- the structure of the companies in the industry located in the area e.g. TSL, repair and maintenance services predestined to settle in the centre of logistics in order to establish cooperation with them, or to pose as potential competitors,
- the attitude of local authorities to the implementation of the project [8].



*Fig. 5. The planning phase of the logistics centre*

#### 4.2. The stage of implementation and control

This step involves the actions taken by those responsible for the realization of the project:

- acquisition of the ownership of the plots of land,
- logistics centre facilities or managing them on the level of lease and rental,

- the range of construction works (e.g. Surveying, designation of the area of the logistics centre, construction of the office building needed for the entity implementing the investment and the management of the logistics centre, construction of the parking, and maneuvering area).

In the stage of investment, measures should be taken to encourage companies to settle in the resulting logistics centre.

This stage involves:

- cooperation with various companies in the logistics facility,
- negotiations, agreement of the parties involved in a contract of cooperation with other companies,
- formation of joint ventures which sign a contract of cooperation – corporations,
- joint ventures (e.g. The joint commissioning and organization of research and development, purchasing raw materials, organization of conferences and training for employees) [9].

The control stage includes:

- monitoring the implementation of cooperation agreements with other companies,
- summarising the existing cooperation, evaluating the implementation of joint projects.

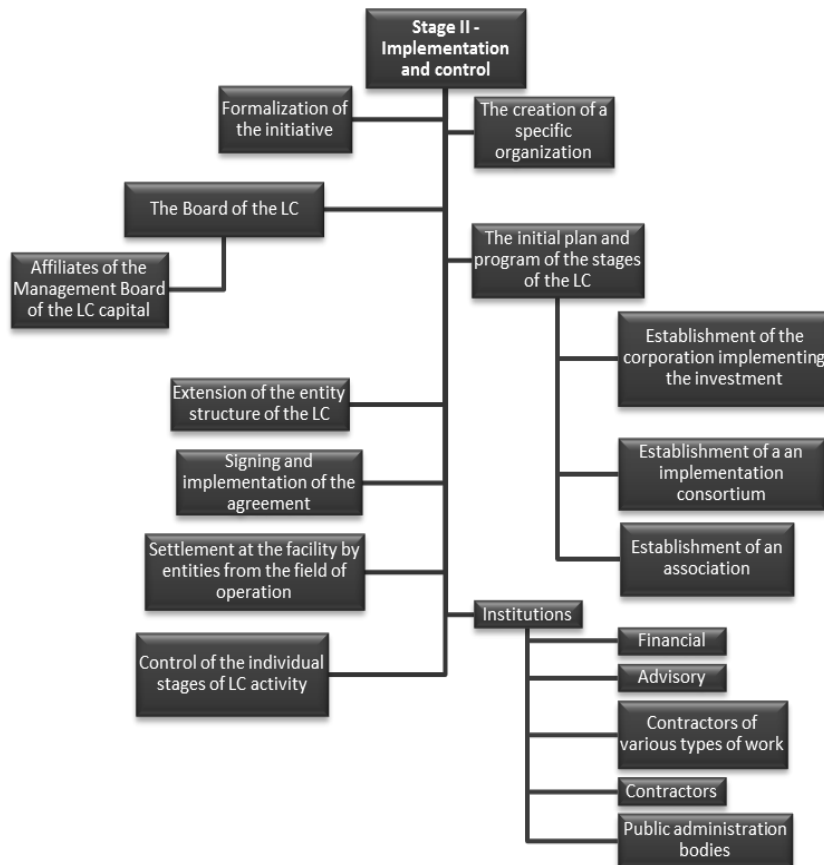
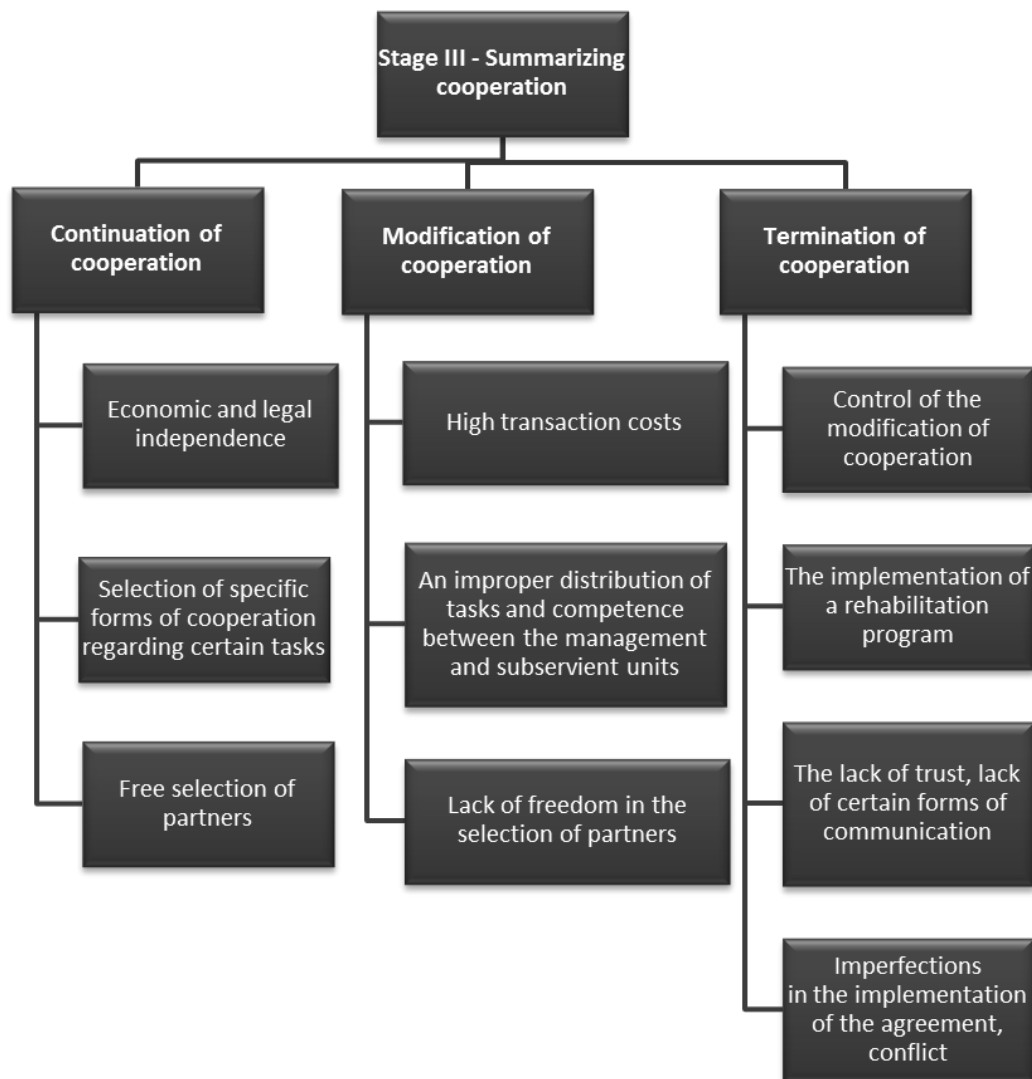


Fig. 6. The stage of implementation and control [10]

### 4.3. The stage of summarizing cooperation

The stage of summarizing cooperation involves:

- continuation or modification of such cooperation. (e.g. research – development work, the purchasing of raw materials),
- termination of cooperation with the companies, with which cooperation is not effective, does not produce the desired effects, does not meet the designated targets, is not carried out in accordance with what was agreed in the contract of cooperation.



*Fig. 7. The stage of summarizing cooperation*

## Conclusion

The cooperation between the companies participating in the initiative is to create and implement goals. The scope of work of a logistics centre includes reducing transport costs, distribution, storage, trans-shipment and receipt of cargo carried in national and international facilities. The adoption and course of work with the right partner can contribute to either the market success or failure of the logistics centre. For partnership to proceed efficiently, all the stages of co-operation development of the project must be considered, and in the case of any inconsistencies, reaction must be immediate to try to solve the existing problems on a regular basis. The most important step in cooperation between businesses and the logistics centre is the realization of the planned tasks specified in the agreements.

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