

LOCALIZATION OF LOGISTIC CENTERS IN THE CZECH REPUBLIC AND THE DECISION MAKING WAYS ABOUT OUTSOURCING OF LOGISTIC SERVICES

Alexander Chlaň¹, Miroslav Gottfried²

The paper deals with the localization of logistic centers in the Czech Republic in relation to the development of transport field on European continent. Major influences on current and future building of logistic centers are dealt in the paper together with the decision making ways of outsourcing services of an external logistic services supplier or the operation of a logistic center by a private company operating in the light industry from the economic and technological point of view.

Key words: logistic centers, outsourcing, logistic services

1 Introduction

During last few years many companies have changed their strategy from focusing on short term cost saving projects to long term cost saving projects in parallel with establishing of long term strategic partnership that in multiplication brings higher saving. One of the tools for cost saving is outsourcing of services that company doesn't want to operate herself. Vendor has to assure delivery optimal services (minimal cost and time in parallel with maximum quality). In case of logistics and services provided in logistics centers it means to operate all the services in the sufficient level of quality with minimal costs and in shortest term to satisfy all customers' wishes.

2 Trends of development of the Logistic Market in connection to development of EU and the Czech Republic

Admission of the Czech Republic into European Union was the main impulse for increase of activities on the field of placement of manufacturing there. This led to the increase of mobility of people and goods in European regions.

Main characteristics of the European transportation are:

- Increase of distances between place of manufacturing and consumption
- Increase of requirements on optimal flows of the goods and information

¹ Ing. Alexander Chlaň, Ph.D., University of Pardubice, Jan Perner Transport Faculty, Department of Transport Management, Marketing and Logistics, Studentská 95, 532 10 Pardubice, Czech Republic, tel. +420 466 036 394, E-mail: alexander.chlan@upce.cz, Technical University of Lisbon, Instituto Superior Técnico, Department of Civil Engineering and Architecture, Av. Rovisco Pais, 1049-001 Lisbon, Portugal, E-mail: alexander.chlan@civil.ist.utl.pt

² Ing. Miroslav Gottfried, University of Pardubice, Jan Perner Transport Faculty, Department of Transport Management, Marketing and Logistics, Studentská 95, 532 10 Pardubice, Czech Republic, E-mail: mgottfried@foxconn.cz

- Road transport is the dominant kind of transportation
- Low flexibility of rail transport.

Main trends of Czech transportation market are then determined from development of European Union:

- Tremendous increase of road transportation
- Decreasing portion of rail transportation on the transportation market
- Limited capacity and low quality of transport infrastructure
- Increase of demand of the logistics services as reaction to increase of volume on export and admission of foreign investors that is connected to increasing number of competitors
- Increasing press on quality of provided logistics services
- Effort to decrease logistics costs of distribution processes.

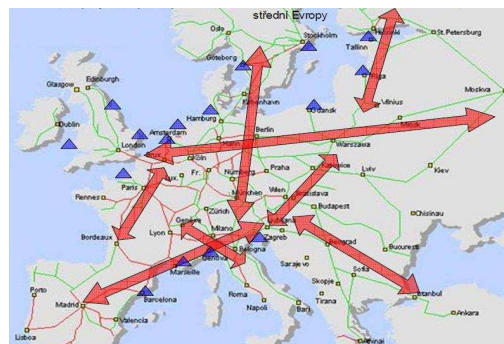
Increasing portion of road transportation and decreasing portion of rail transportation is caused by development of logistic technologies that help to the user to increase the flexibility like Just In Time, minimization of the transportation's duration etc.

Development of the logistic market is further characterized by its two different trends. On one side it is possible to identify still increasing trend of centralization of logistic operations and regional distribution centers in European region, on the other side overload of European roads and highways requires definite portion of decentralization and flexibility, where especially small transport and logistic services providers, warehouses can react to the customers wishes.

It is possible to say that outsourcing of the logistic activities where importers, manufacturing units etc. purchase services from external vendors is the most obvious trend in the EU. During last few years this kind of cooperation especially on the field of integration and transfer of information has changed to the long term relationship.

Localization of the logistic centers is usually connected to the localization of the transport infrastructure. European Union has focused on the development of all transportation corridors – road, rail, water and air as well during last years.

Due to the localization of the Czech Republic in European Union and upcoming realization of projects of transportation infrastructure construction among the Czech Republic – Poland – Belorussia – Russia, between Balkans and Russia and between Bulgaria-Rumania-Ukraine and Russia, the Czech Republic attained good position for negotiation that is supported by development of economics of Balkans, Ukraine and Russia. It is possible to say that the Czech Republic is the linage between mentioned regions and countries (see the picture 1 below).



Picture 1: The main flows of goods within EU

Source: Authors

Logistic services focused on movement of goods participate by 38% (2007) on the whole amount of logistic costs in Europe. The main presumption for increase of exchange of goods among EU countries is the access to the sufficient transportation network and efficient logistic systems that will flexibly react to changes in development of goods exchange.

In old European countries many logistic services centers are operated and most of them are connected to more kinds of transportation. Their establishment has been supported by European funds. The highest concentration of the logistic centers is in Belgium, the Netherlands, Germany, Great Britain and France. Their profits are based on dynamics of the EU regions, strong industry basement, good infrastructure net etc. The second portion of the amount of logistic centers in European Union is placed on the southern part of the Europe – this is the main reason why the most of road- and rail infrastructure is oriented from the North to the South.

The Czech Republic is the only short stage on the similar network of the logistics in comparison to other countries in Europe. Currently operated logistic centers (mostly focused on warehousing) are owned by private sector and are mostly connected only to road infrastructure (especially to motorways and highways). The most density of logistic centers is by the D1 and D5 motorway and customers are serviced only by trucks.

Regarding to long time perspective it is possible to expect the change due to:

- Increasing costs of road infrastructure involve total logistic costs
- Limited capacity of road network that affect reliability
- Currently operated logistic centers usually do not cover services connected to manufacturing and consumption but they are focused on distribution of completed stuff.

3 3PL - 3rd Party Logistics

3rd Party Logistics (3PL) is the supply chain practice where one or more logistic functions of a firm are outsourced to a 3PL provider. Typical outsourced logistic functions are: inbound freight, customs and freight consolidation, public warehousing, contract warehousing, order fulfillment, distribution, and management of outbound freight to the client's customers.

3PL can also provide services like: repackaging, assembling and return logistics. The 3PL Provider manages and executes these particular logistic functions using its own assets and resources, on behalf of the client company.

The thoughts behind this are to be kept the firm competitive by keeping it lean without owning many assets, allowing it to focus on niche areas and to reduce operational costs. Third Party Logistics is also referred to as Contract Logistics.

3.1 Usage, application and benefits of 3PL

The best results from implementation are identified when company fits to following characteristics:

- Wide and/or complex distribution network.
- Not focusing on logistics as one of their core competencies.
- In strategic discussions on Core Competence.
- Phase of creation of a new product group.
- When a company is integrating activities of a takeover.

The application of 3PL is normally done in a number of phases:

1. Awareness – Investigation of possibilities, informing of employees,

2. Market Research – Investigating of market trends
3. Strategy - Developing and comparing logistics concepts.
4. Make or Buy - Building own competence or outsource. Outsource completely or partly.
5. Business Plan – Analyzing of risks, costs, benefits. Phasing. Timing.
6. Selection - Selecting partner based on market coverage, competency, integrity, vision, etc.
7. Agreement - Agreeing on mutual expectations using a set of performance metrics.
8. Evaluation and Renewal - Sustaining of partnership via mutual financial costs and benefits, joined planning, multi-level contacts, opened information exchange.

Application of 3PL can bring following benefits to the user:

- Allows firms to focus on developing their Core Competences,
- Cost competitiveness,
- Freeing up resources (money),
- Benefit from coming from the logistics know-how and international distribution networks of specialized 3PL Logistics providers,
- Improved customer service through shorter shipment times,
- Reduced inventory costs through better management,
- Cost benefits through volume shipping discounts,
- More scale able logistics operation and cost model,
- Risk reduction,
- Increased expertise in supply chain security.

But on the other side 3PL system is connected with following disadvantages and risks:

- Loss of control over the logistics functions (especially for critical parts).
- More distance from clients - Loss of human touch.
- Differences of opinion or perception of the service level of the third party provider.

3.2 Assumptions of 3rd Party Logistics (3PL).

Conditions

It can be inferred that the firm engaging this practice is likely:

1. A firm that does not focus on logistics as one of its core competencies.
2. At least a mid-sized corporation such that the logistics cost is substantial enough to justify the engagement of the outsourcing services.

4 4PL -4th Party Logistics

4PL can be defined as a complete provider that assembles and manages resources, capacities and technologies of their own organization, at the same time that they complement it with services of multiple logistic operators, transportation companies, storage, customs agents, among other; thus developing the most accurate logistic configuration for the commercial model of the company.

4PL can be marked as the evolution of supply chain outsourcing due to convergence of technology and the rapid acceleration of e-capabilities those have heightened the need for an overarching integrator for supply chain-spanning activities. Fourth Party Logistics is the shared sourcing of supply chain spanning activity with a client and select partner, under the direction of a 4PL integrator that assembles and manages the resources, capabilities, and technology of its own organization with those of complementary service providers to deliver a comprehensive supply chain solution.

A 4PL supply chain solution should be considered in the broader context of improvements across the entire supply chain, which includes three phases of work: Reinvention, Transformation, and Execution – please see next table.

Table 1: Broader context of improvements

Phase	Description
Reinvention	Reinvention leverages traditional supply chain management consulting skills, aligning business strategy with supply chain strategy, to creatively redesign and integrate the supply chains of the participants.
Transformation	Transformation efforts focus on specific supply chain functions (sales and operations planning, distribution management, procurement strategy, customer support, and supply chain technology). Transformation leverages strategic thought, deep analysis, process redesign, organizational change management, and technology to integrate the client's supply chain activities and processes.
Execution	A 4PL provider takes on operational responsibility for multiple supply chain functions and processes. The scope goes well beyond traditional transportation management and warehouse operations logistics outsourcing.

Source: Authors

4.1 Benefits of application of 4PL

The 4PL approaches the concept of supply chain integration through four key drivers of shareholder value as

- Increased revenue,
- Operating cost reduction,
- Working capital reduction,
- Fixed capital reduction.

Traditional approaches have tended to focus only on operating cost reduction and asset transfer.

Table 2: Effects of 4PL

Effect	Reason
Revenue growth	Growth is driven by enhanced product quality, product availability and improved customer service. Revenue can increase for example by lowest-cost transportation – dramatic customer service improvements can be attained.
Operating cost	Savings are achieved through the complete outsourcing of the supply chain function – through operational efficiencies, process enhancements and procurement savings. Synchronization of supply chain activities by supply chain participants leads to operating-cost reductions and a lower cost of goods sold, due to integration of processes, and improved planning and execution of supply chain activities.
Working-capital reductions	Decrease can be realized through inventory reductions and reduced "order to cash" cycle times.
Fixed-capital reductions	Result from capital asset transfer and enhanced asset utilization. The 4PL's logistics service providers can take ownership of physical assets, thus freeing up assets.

Source: Authors

The core 4PL model is known as Solution Integrator. In this operating model, the 4PL operates and manages a comprehensive supply chain solution for a single client. The Solution Integrator arrangement encompasses the resources, capabilities, and technology of the 4PL and complementary service providers to provide a comprehensive integrated supply chain solution that delivers value throughout a single client organization's supply chain components.

5 Economical Point of View

As is mentioned above benefits come from cost saving within full range of operations. In very first modeling and calculations where we should identify if to operate the services ourselves or if to outsource them, we can use firm can use formula 1. Formula is simplified for the best understanding.

$$\sum_{i=1}^n C_{O_i} \Leftrightarrow \sum_{i=1}^n C_{F_i}$$

Formula 1: Cost Comparison

Source: Authors

Where C_O area costs of outsourced services, C_F are costs of self operated services, i - is „subject“ of comparison, n is number of „subjects“.

Firm should decide for the option with the lowest costs.

For better evaluation, company should create various scenarios based on prognosis of future development and use some kind of modeling program to evaluate all the costs, profits and risks caused by different inputs in scenarios.

6 Conclusion

In the current economic situation in European Union it is difficult to make prognosis on the field of logistics development. It is possible to say that firms are just now focused on cost saving projects and that outsourcing of the services is strategic decision because whether to operate or outsource some services is not simple decision and should be based on deep analysis and all the analysis should be evaluated by economic models and verified by simulation.

3rd Party Logistics as well as 4th party Logistics can provide significant changes to a user on Revenue growth, Operating cost, Working-capital reductions and Fixed-capital reductions.

3PL is evolving from predominately transactional-based to more strategic in nature. At the same time 3PL is gradually evolving into 4PL. A Fourth Party Logistics provider is a supply chain services provider that searches the best logistical solutions for its client, typically without using own assets and resources.

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