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BENEFITS OF LOGISTICS CENTRES CATEGORIZATION

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1. Introduction

Globalization of industry and trade made a significant impact on practice and theory of logistics and supply chain management. Trade barriers have been decreased, but the logistics services requirements as well as cost constantly raises, so various businesses, especially international companies, change the attitude to material storage, production and product distribution. They are searching for industrial and logistics centres where repacking, labeling, bar coding, light assembly and other value-added services to merchandise in transit can be provided.

The demand for competitive logistics centres is growing accordingly. The heritage of theory development and empirical research on unified concept of logistics centre is quite poor in comparison to other disciplines. It might be influenced by a rather short history of supply chain management theory. So understanding what logistics centre definition encompasses is essential in response to scientific, commercial and governmental attitude of any country.

The aim of the research is to determine logistics centres concept pointing at their need for categorization and to point out or to frame the benefits of logistics centre categorization.

2. Logistics centres and their role in the supply chain

Logistics Centre is not a new concept – it appeared 30 years ago. Logistics has changed over the past fourfive decades. During this time there have been a number of significant changes in the way things are produced, stored and moved, which is what logistics is all about. Accordingly either practical or nonfiction understanding of Logistics centre functional and conceptual significance changed. Hence there was no commonly agreed definition of this concept established. Lots of characteristics (names) are used to describe centre for logistics functions performance – logistics centre, distribution centre, central warehouse, freight/transport terminal, transport node, logistics platform, freight village, logistics depot, distripark etc. Variation in the definition of the term are partly an outcome of the evolution process and new types of centres that have been developed in recent years.

Tab. 1 Logistic centre evolution

1960s – 1970s	1980s – early 1990s	Mid 1990s – present
		Materials management Distribution services (national/global)
	Bonding	Import clearance Bonding Inbound transportation
Receiving	Receiving	Receiving
	Cross-docking	Cross Docking
Storage	Storage	Storage Inventory management and control Shipment scheduling
Order processing Reporting Picking	Order processing EDI* Reporting Picking	Order processing EDI* Reporting Picking
Order assembly (Re) packaging	Order assembly (Re) packaging Stretch-shrink-wrapping	(Product) subassembly Order assembly (Re) packaging Stretch-shrink-wrapping
Palletizing/ unitizing Label/mark/stencil	Palletizing/ unitizing Label/mark/stencil	Palletizing/unitizing Label/mark/stencil

Shipping Documentation	Shipping Documentation Outbound Transportation	Shipping Documentation Outbound Transportation Export documentation FTZ* operation JIT/ECR/QR* services Freight rate negotiation Carriers/route selection Freight claims handling Freight audit/payment Safety audits/reviews Regulatory compliance review Performance measurement Returns from customers Customer invoicing
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Source: Ernst F. Bolten, *Managing time and space in the modern warehousing*, Amacom, 1997, p.19.

Abbreviations*: EDI – electronic data interchange, FTZ – free trade zone, JIT – just-In-time ECR – efficient customer response, QR – quick-response.

The process of globalization influenced multinational companies' production concentration into fewer locations. Market has demanded a new global logistics strategy. Since the end of 1980s global firms have been steadily reducing their number of national warehouses, consolidating them into regional distribution centres that serve a much wider geographical area. European experience has showed that such consolidation can result in enhanced competitiveness, though such centralized logistics services system may influence growth of transport costs, because products have travel longer distance and usually shorter time to succeed in customers' requirements fulfilment. One more of lately offered logistics services package include final assembly and products customization that takes place at distribution centres, close to the end users. In most cases, regional distribution centres are located near airport or seaport, so that raising demand can be met with agility, reliability and flexibility.

Logistics centers are challenged to offer market a competitive and high quality categories of functions, enlarge their profitability, and limit environmental interference of their activities. Logistics centre evolution and development is leading to functionality and service quality improvement as well as to unification of commonly used determinants for their establishment.

3. Possibilities of logistics centres division and categorization

A Logistics Centre is the hub of a specific area where all the activities relating to transport, logistics and goods distribution – both for national and international transit – are carried out, on a commercial basis, by various operators. The operators may be either owners or tenants of the buildings or facilities (warehouses, distribution centres, storage areas, offices, truck services, etc.) built there. In order to comply with free market rules, a Logistics Centre must be accessible to all companies involved in the activities set out above. A Logistics Centre must also be equipped with all the public facilities necessary to carrying out the above-mentioned operations. If possible, it should also include public services for the staff as well as users' equipment. In order to encourage intermodal transport for goods handling, a Logistics Centre should preferably be served by a variety of transport methods (roads, rail, sea, inland waterways, air). It is vital that a Logistics Centre be managed as a single and neutral legal body (preferably by a Public-Private-Partnership) if synergy and commercial cooperation are to be ensured. Finally, a Logistics Centre must comply with European standards and quality performance in order to provide the framework for commercial and sustainable transport solutions.

In short, the Logistics Centre is simply a village planned and built to best manage all the activities involved in freight movement. Usually only large-scale intermodal logistic centre is called freight village. Some authors make an emphasis on functionality of logistics centre: a logistics centre is a particular territory where such services as cargo transfer, storage, distribution over the territory of one or more countries, customs mediators, insurance, maintenance and repair of transport facilities, etc. are provided. Other authors – exclude the scope of physical area and regard logistics centre or freight village a structure including premises, called by other terms above for specific activities to be performed. Some authors describe logistics centre as a freight village being a specific group of transport and warehousing centres. Some of them states that freight villages usually have warehouses and distribution companies based alongside the rail facilities. Break-bulk and freight consolidation services are usually also available. Some of these facilities are classified as inland ports and so customs services are available.

Services provided by logistics centre depend on the predominant function, size and range of operation. Proposing no differentiation between terms of logistics and distribution centre use these criteria to divide them into:

- a) *International* Logistics Distribution Centres.
- b) *Regional* Logistics Distribution Centres, those are intermediate link in the logistics channels, and fulfilling regional distribution service tasks.
- c) *Local* Logistics Distribution Centres, those in most cases are end links of a distribution network.

In this paper it is proposed a division of logistic centers in multiple categories, namely, starting from the realistic situation where the logistic centers stand today, imposes the need to explore the fort and consistent criteria for their categorization.

Categorization of logistics centers will enable their division at the international, national and regional level in order to create efficient logistical chains and network solutions for the optimal implementation of commodity flows.

Detailed division of the logistic center will also enable the definition of technological processes within certain categories for the purpose of optimization of these processes in order to increase the rationalization, to expedite the flow of goods, increase the efficiency of logistics systems, logistics processes harmonization and cooperation of participants in the logistics-distribution chains.

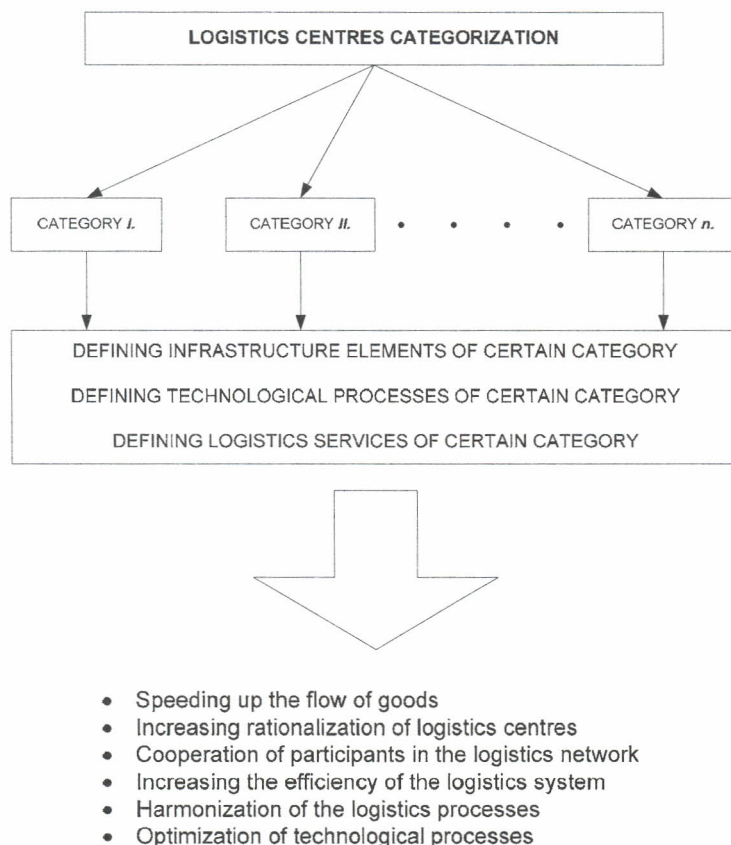


Fig. 1 Model of future logistic centres categorization. Source: By Authors

Future research will be focused on the perception of the complexity and problems of logistic centers and logistics-distribution network, its elements and subsystems of

action by the following criteria: spatial, technical, technological and organizational in purpose of defining the criteria for categorization of logistic centers.

The goal of future research is to provide logistic centers division, which is essential for the existing centers and also can be used as an important factor for the development and planning of future logistic centers.

4. Benefits of logistics centres categorization

Logistics centres can be configured to provide a wide range of functions such as: storage, transport, distribution, assembly, direct shipment, shipment with milk runs, cargo consolidation, sorting, break-bulk, distribution network management/vehicle routing, delivery, package tracking, e-commerce services, etc. One or more of these functions can be employed at a logistics centre to cater for requirements in a specific supply chain. Due to the complexity of logistics systems and supply chains there is a need to explore the complexities and problems of logistic centres and logistics-distribution network, its elements and subsystems action by the following criteria: spatial, technical, technological and organizational in purpose of defining the criteria for categorization of logistic centres.

The aim of the proposed logistics centres categorization will be to increase the efficiency of supply chains and to define specific methods and procedures which will result in better performance of the operations of logistics centers.

The benefit of logistics centers categorization is to create a unique division of logistic centres according to their characteristics and features, and in accordance with the division to define the functionality of business and technical processes within the centres. This will certainly affect the change in the structure and organization of logistic centres that by improving the quality of operations and services achieve market competitive advantage.

The system of logistic centres categorization will be used as guidelines for future logistic centres construction, as well as guidelines for a new approach in planning the logistics network. Categorization of logistics centres will result in setting up the model of selection for logistic operators, that is for all the participants in the supply chain, based on the alignment of existing logistic centers in the regional, national and international logistics networks.

In short, benefits of logistic centres categorization may include:

- introduction of a unified system of logistics centres categorization
- displaying current status of logistics centres
- guidelines for the improvement of existing logistics centres business.
- guidelines for the future logistics centres planning and construction
- new approach in planning the logistics network

- classification of existing logistics centres in the regional, national and international logistic networks
- setting up the model of selection for logistic operators, that is for all the participants in the supply chain.

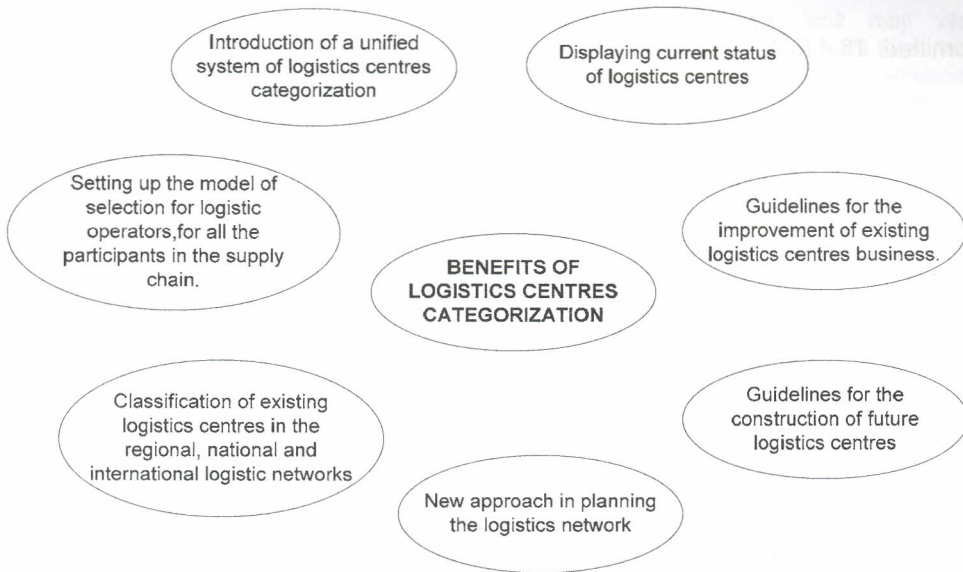


Fig. 2 Benefits of logistic centres categorization. Source: By Authors

5. Conclusion

Nowadays logistics centres have been developed during last three decades and their functionality expanded from traditional individually offered receiving, storage, shipping services to sophisticated, highly automated value added complex of services, including number of handling functions from storage, consolidation, maintenance, etc services to customs, final assembly, repairing, financial and audit attendance. The functionality depends on type, legal status, geographical coverage, intermodality and other criteria of a logistics centre. Issue of different terms, naming the same logistics services rendering facilities, is important for function determination as well.

Logistics researchers have made little effort to build a unified logistics centre conception. That is why the attempt to rectify the hierarchy of logistics facilities and formulate the definition of logistics centre is of a great importance to every researcher, interested in logistics theory.

It is necessary to explore the complexity and the problematic of logistics centers, and logistical-distribution network, its elements and subsystems action by the following criteria: spatial, technical, technological and organizational purpose in purpose of defining

the criteria for categorization of logistic centers, because the logistic centers categorization sets unique division of logistic centers according to their characteristics and features, which results in the above mentioned benefits and savings in the whole logistics system.

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Resumé

VÝHODY KATEGORIZACE LOGISTICKÝCH CENTER

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Proces globalizace ovlivňuje mnoho nadnárodních společností, jež mají výrobu koncentrovanou jen do několika málo nejvýhodnějších lokací. Trh si vyžádal vytvořit zcela novou koncepci globální logistiky. Od roku 1980 nadnárodní společnosti přistoupili k dramatickému omezení místních a národních skladů, které nahradili moderními distribučními centry, jež pokrývají mnohem větší zeměpisnou rozlohu.

V uvedeném článku je představena koncepce rozdělení logistických center do několika kategorií, dále jsou stanoveny a definována kritéria členění, která reprezentují současný stav.

Účel tohoto výzkumu je nalezení prvků vymezujících jednotlivé kategorie logistických center a jejich následné ohodnocení stanovenými kritérii. Význam zkoumání kategorizace a hodnocení logistických center je v nalezení přístupů pro zvýšení kvality operací a poskytovných služeb za účelem zvýšení konkurenceschopnosti.

Summary

BENEFITS OF LOGISTICS CENTRES CATEGORIZATION

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The process of globalization influenced multinational companies' production concentration into fewer locations. Market has demanded a new global logistics strategy. Since the end of 1980s global firms have been steadily reducing their number of national warehouses, consolidating them into regional distribution centres that serve a much wider geographical area. Logistics centers are challenged to offer market a competitive and high quality categories of functions, enlarge their profitability, and limit environmental interference of their activities.

In this paper it is proposed a division of logistic centers in multiple categories, namely, starting from the realistic situation where the logistic centers stand today, imposes the need to explore the form and consistent criteria for their categorization.

The aim of the research is to determine logistics centres concept pointing at their need for categorization and to point out or to frame the benefits of logistics centre categorization. Conclusion of proposed article will be analysis of logistics centre benefits which will certainly affect the change in the structure and organization of logistic centres that by improving the quality of operations and services achieve market competitive advantage.

Zusammenfassung

DIE VORTEILE DER KATEGORISIERUNG DER LOGISTISCHEN ZENTREN

Darko BABIĆ, Morana IVAKOVIĆ, Petr PRŮŠA

Die multinationale Unternehmen wurden vom Globalisierungsprozess so beeinflusst, dass sie ihre Erzeugung in einem kleineren Bereich konzentrierten. Am Ende 80-er Jahre verminderten globale Unternehmen die Zahl ihrer Lager, die sich in regionale Distributionszentren konsolidierten. So können sie einem breiteren geographischen Bereich dienen. Die Logistikzentren

sollen dem Markt konkurrenzfähige und hochqualitative Funktionen anbieten, ihren Profit vergrößern und Umweltbeschädigungen, die durch ihre Aktivitäten entstehen können, vermeiden.

In dieser Arbeit wurde eine Verteilung von Logistikzentren in mehreren Kategorien vorgeschlagen, die aus dem realen Zustand hervorgehen. Verschiedene Kriterien zur Kategorisierung von Logistikzentren wurden untersucht und bestimmt.

Dieser Untersuchung setzt sich das Ziel Konzept von Logistikzentren zu bestimmen, wobei die Vorteile von Kategorisierung betont werden sollen.

Zum Schluss wird der Profit von dieser Kategorisierung, der einen Struktur- und Organisationswandel beeinflusst, untersucht und definiert, dabei die Arbeit und Dienstleistungsqualität verbessert und die Dienstleistungen konkurrenzfähiger auf dem Markt werden.