

## LOGISTIC CENTRES AND DISTRIBUTION CENTRES – SIMILARITIES AND DISTICTIONS

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**Abstract:** Differentiation between logistic and distribution centres is an important part of the logistics nomenclature, especially as both names are often used in wrong contexts and interchangeably. In the article, a literature analysis aimed at differentiating between them and establishing the most important distinctions has been conducted.

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## 1. INTRODUCTION

Logistics is a rapidly growing discipline of science. Because of being relatively new, however, it encounters the problem of a lack of specific, defined terminology and learning methodology. The formal study of logistics' definitions has not yet been done. In many cases we lack fully determined, unambiguous and widely accepted definitions of basic logistics issues. One of those are logistics centres, which, despite of being crucial for the functioning of the logistic network and one of the most recognizable elements of logistics, have not yet been subjected to close scrutiny in all aspects. The research on this matter is scattered in many areas, and the degree of its accuracy varies greatly between individual areas of research. One of the profound problems are the often mixed concepts of a logistics centre and a distribution centre. They are especially often used interchangeably in the common speech, but this issue happens to appear in scientific works even. Many companies also contribute to this problem by intentionally using the erroneous nomenclature for marketing purposes, since they aim to raise their prestige by describing their premises as a "logistics centre". Differentiating between those two objects is a substantial factor of the logistics science, and using them as equivalent creates a fundamental methodological problem.

In this article, a literature analysis has been performed for distinction between a logistics centre and a distribution centre, as well as describing the differences. The analysis has been conducted basing on the supply chain specialists' works (Polish authors: P. Blaik, I. Fechner, E. Gołemska, S. Krzyżaniak, B. Skowron-Grabowska, M. Stajniak, K. Rutkowski, foreign: J.J. Coyle, E.J. Bardi, C.J. Langley Jr, C. Bozarth, R.B. Handfield) as well as logistics centre scientists' (S. Bartosiewicz, I. Fechner, F. Fijałkowski, E. Gołemska, M. Krzyżanowski, S. Markusik, I. Meidutė, J. Miklińska, B. Skowron-Grabowska, C. Thieis). On account of the article's authors referring to a previously written article, in which a literature analysis had been conducted in order to define the concept of a logistics centre, not all of the used sources have been specified.

## 2. DEFINING THE CONCEPT OF A LOGISTICS CENTRE

On the ground of the previously conducted literature analysis, the authors decided to employ the last article's definition of a logistics centre for the purpose of further work.

According to this definition (Izdebski et al., 2017, pp. 373–374), a logistics centre is an important node in the logistics network, and is an autonomous economic entity with a separated area, in which by the rules of free competition a few (at least two) autonomous companies rendering logistic services to internal and external clients function as an open, not limited to a particular entity service.

Systematic mutual planning and cooperation of the centre's entities should lead to synergistic results. For this goal, a logistics centre should be administered by an autonomous and neutral organisation taking care of the growth and efficient functioning of the centre as a whole. The basic role of a logistics centre are complex logistics services (including, among others, transport, storing, distribution, freight forwarding and administering of the information) or coordinating them, rendering accompanying services such as financial services or administering. A logistics centre must possess proper infrastructure and suprastructure (including, among others, roads, open spaces, parking lots, civil engineering works and buildings) allowing it to provide the required services. Because of the growing importance of intermodal transport, a logistics centre should have an access to two or more branches of transport and a transloading terminal for combined transport.

The definition has been developed basing on the criteria which the authors picked as the crucial for defining a logistics centre as a logistics object (Izdebski et al., 2017):

1. a logistics centre is a separated, autonomous economic entity,
2. there should be an organisation taking care of the centre's administration, efficient functioning and growth of the centre as a whole,
3. on the premises of a logistics centre operate a few (at least two) autonomous companies offering logistic services, competing with each other on the basis of free competition,
4. a logistics centre is an organisation offering its services to external clients as an open service, not limited to particular entities,
5. a logistics centre is a node of a logistics network and is connected to the country's logistics network,
6. its basic commercial activity are complex logistic services (among others transport, storing, distribution, freight forwarding and information administering) or their coordination, and accompanying service like financial services or administering,
7. it should possess proper premises, infrastructure and suprastructure for rendering its commercial activity,
8. a logistics centre should have an access to two branches of transport,
9. a logistics centre should have a terminal for transloading in the combined transport.

The comparison between logistics centres and distribution centres has been conducted basing on the above nine criteria.

### **3. DEFINING THE CONCEPT OF A DISTRIBUTION CENTRE**

Defining the concept of a distribution centre proved rather difficult in the literature analysis, due to the scarce number of existing definitions and ones

treating them as equivalent to logistics centres, further proving the existence of the problem that is the basis of this article.

As the foremost source of the misunderstanding, the authors would point to the logistics centres and distribution centres' mutual deriving from the wares service centres (Gołemska, 2009), which first appeared in the US and were called "distribution centres." Those objects were specialised logistics nodes in the supply chains of particular companies and allowed the wide and complex distribution of products to the companies' clients. The logistics centres, being the next step of the logistics evolution, would start appearing in the 80ties and 90ties along with the globalization process and the following need of complex external logistic services. According to E. Gołemska, the distribution centres would be logistic objects built for the internal needs of big international companies (Gołemska, 2009, p. 128).

This thesis is confirmed by the definition of (Śliwczyński & Koliński, 2014, p. 144): a distribution centre is an economic entity (or an organisational unit of an enterprise, or a group of entities) possessing a proper logistic infrastructure in the supply network, along with work method and information flow, required for complex realisation of the logistics service: receiving, storing, completion and sending out the shipments and many additional logistic services essential for the complete fulfillment of the customers' needs. In this definition, it should be noted that a few entities are allowed in the organisation of the centre.

According to the *Encyklopedia zarządzania*, a (regional) distribution centre (Michałowicz & Pituch, 25.06.2018) "is an autonomous economic entity (or an organisational unit), in which final products or components are stored by one or a few producers for the goal of further redistribution to dealers, importers, partner companies or other subordinate entities. The main and fundamental tasks of a RDC are: receiving, storing, completion and handling outgoing shipments. These organisational units sometimes provide additional services. The authors of the article propose to interpret the "autonomous economic entity" part of the definition as a result of the distribution centres and logistics centres both deriving from wares service centres, as well as the existence of objects more advanced than distribution centres, but not fulfilling all the requirements of a logistics centre yet.

The authors, following I. Fechner, propose to name such objects the "warehouse centres" since (Kisperska-Moroń & Krzyżaniak, 2009, p. 288) "a warehouse centre is a spatial object with its organisation and infrastructure, which allow various autonomous enterprises to store and move their wares between the sender and the recipient." It is explicitly stated that the centre gives service to autonomous clients.

#### 4. COMPARISON OF LOGISTICS CENTRES AND DISTRIBUTION CENTRES

As stated before, the authors decided to compare the logistics centres and distribution centres in the nine criteria which had, in the previous article, been the basis for developing the logistics centre's definition.

As for the first criterion (a logistics centre is a separated, autonomous economic entity), there is a fundamental difference: a distribution centre should be described as an economic entity or organisational unit dependant on the mother company or a group of enterprises which it services.

In the case of the second criterion (there should be an organisation taking care of the centre's administration, efficient functioning and growth of the centre as a whole) there may be a resemblance mentioned, although it is not perfect: a distribution centre, in theory, does have an administrative organisation in the entities it serves.

The third criterion (on the premises of a logistics centre operate a few (at least two) autonomous companies offering logistic services, competing with each other on the basis of free competition) is a point where a significant difference appears. In distribution centres, some exceptions aside, there are no autonomous, competing entities, but rather a homogenous object giving service to superior, main entities. This criterion, however, is not always seen as inevitably needed for defining a logistics centre. In case of some Polish logistics centres, for instance, one entity often administers the whole object.

The most prominent difference between a logistics centre and a distribution centre, in the authors' opinion, is in the fourth of the criteria (a logistics centre is an organisation offering its services to external clients as an open service, not limited to particular entities). A distribution centre does not provide service open to the market, but only to particular entities. This criterion is often underlined as inevitable for an object to be considered a logistics centre. I. Meidutė's article (2005) underlines two reoccurring in many authors' definitions elements: firstly, the logistics centre being an object offering its services as an open service, and secondly, it being a generator of new business processes. Also the Europlatforms organisation, whose definition of a logistics centre is by many scientists' opinions the best currently existing, emphasises the importance of the openness of service and free competition as the criteria defining the logistics centre. For this reason, the fourth criterion should be acknowledged as the main difference between logistics centres and distribution centres.

The fifth of the criteria (a logistics centre is a node of a logistics network and is connected to the country's logistics network) could be mooted: a distribution centre definitely is a node of a logistics network, but it is not a node widely accessible for all entities, therefore being rather a node of its superior entities' logistic network, not the country's.

The sixth criterion (its basic commercial activity are complex logistic services (among others transport, storing, distribution, freight forwarding and information administering) or their coordination, and accompanying service like financial services or administering) should be noted to also apply to the distribution centre, proven by the definitions cited before. It should also be noted, however, that the level of logistic services' complexity would probably be lower than in a full-fledged centre: it would be adapted to the distribution centre's mother entity's needs.

As for the seventh (a logistics centre should possess proper premises, infrastructure and suprastructure for rendering its commercial activity), eighth (a logistics centre should have an access to two branches of transport) and ninth criterion (a logistics centre should have a terminal for transloading in the combined transport), both similarities and differences may be named. A distribution centre definitely needs to possess proper assets to realize the required services, but their scope may be considerably smaller than those of a logistics centre, leading to lesser requirements in its infrastructure and suprastructure. No intermodal terminal may be needed, for instance, or access to two branches of transport.

In sum, logistics centres and distribution centres may be physically resemblant to each other, especially big distribution centres to smaller logistics centres. Both are objects destined for complex logistic service, which forces the usage of similar technical solutions and possession of proper for logistic service infrastructure and suprastructure. The differences between the two are situated mostly in the organisational matters: while logistics centres are autonomous economic entities offering their services in open service, the distribution centres are internal objects of a superior entity or a group of entities' distribution system. It is worth noting, that similar idea of differentiating between them can be found in article by Rimiene & Grundey (2007) about types of logistics nodes.

## 5. CONCLUSION

In the literature analysis conducted for this article, the main similarities and differences between a logistics centre and a distribution centre have been defined. In the authors' opinion, as the fundamental difference, the method of service should be stated: while logistics centres offer their services as an open service, working with external enterprises interested in the cooperation, the distribution centres are objects specialised in servicing a particular, superior to them economic entities (usually global corporations or groups of enterprises). The main similarity of the two centres is their basic function: both logistics centres and distribution centres specialize in complex logistic service, which requires them to have similar infrastructure and suprastructure. It should, however, be noted that the requirements in this field are lesser for distribution centres. Many authors state that

a logistics centre must have an access to at least two branches of transport and an intermodal terminal: conditions, which are never required for a distribution centre for to be noted as such. All this considered, an additional name could solve this problem: a warehouse centre. It would describe objects that do not possess all the traits of a logistics centre, but offering their services as an open service, not limited like the distribution centres.

## REFERENCES

- Bartosiewicz S. & Świerszcz K. (2014), Aksjologia partnerstwa gwarantem stabilności przedsiębiorstwa i jego rozwoju na przykładzie centrum logistycznego, *Gospodarka Materiałowa i Logistyka*, No. 5, pp. 1–26.
- Blaik P. (2001), *Logistyka. Koncepcja zintegrowanego zarządzania*, PWE, Warszawa.
- Bozarth C. & Handfield R.B. (2007), *Wprowadzenie do zarządzania operacjami i łańcuchem dostaw. Kompletny podręcznik logistyki i zarządzania dostawami*, Wydawnictwo HELION, Gliwice.
- Coyle J.J., Bardi E.J. & Langley C.J.Jr. (2002), *Zarządzanie logistyczne*, PWE, Warszawa.
- EUROPLATFORMS, <<http://fdt.dk/fdt-aktiviteter/europlatfor-ms.aspx>> [accessed: 25.06.2018].
- Fechner I. (2004), *Centra logistyczne. Cel, realizacja, przyszłość*, Biblioteka Logistyka, Poznań.
- Fechner I. (2007), *Zarządzanie łańcuchem dostaw*, Wyższa Szkoła Logistyki, Poznań.
- Fechner I. & Krzyżaniak S. (2013), Rola i znaczenie centrów logistycznych w rozwoju transportu intermodalnego w Polsce, *Zaszyty Naukowe Uniwersytetu Szczecińskiego, Problemy Transportu i Logistyki*, No. 22, pp. 97–107.
- Fijałkowski J. (2003), *Transport wewnętrzny w systemach logistycznych*, Oficyna Wydawnicza Politechniki Warszawskiej, Warszawa.
- Gajšek B. & Grzybowska K. (2013), A cross-country contextual comparison of the understanding of the term logistics platform in practice, *Research in Logistics & Production*, No. 2, pp. 85–108.
- Głodowska K. & Bartosiewicz S. (2015), Wpływ centrów logistycznych na rozwój gospodarczy i społeczny, *Gospodarka Materiałowa i Logistyka*, No. 5, pp. 207–216.
- Gołębska E. (2009), *Logistyka w gospodarce światowej*, Wydawnictwo C.H. Beck, Warszawa.
- Gołębska E. (ed.) (2012), *Logistyka*, Wydawnictwo C.H. Beck, Warszawa.
- Harrison A. & van Hoek R. (2010), *Zarządzanie logistyką*, PWE, Warszawa.
- Izdebski W., Szwed C., Skudlarski J. & Kryś P. (2017), Formulating a uniform definition of a logistics centre, *Research in Logistics & Production*, No. 4, pp. 367–376.
- Kisperska-Moroń D. & Krzyżaniak S. (eds.) (2009), *Logistyka*, Biblioteka Logistyka, Poznań.
- Krzyżaniak S., Fechner I. & Hajdul M. (2012), The concept of a logistics centre model as a nodal point of a transport and logistics network, *Archives of Transport*, Vol. 24, No. 2, pp. 165–186.
- Markusik S. (2013), *Infrastruktura logistyczna w transporcie. Tom II Infrastruktura punktowa – magazyny, centra logistyczne i dystrybucji, terminale kontenerowe*, Wydawnictwo Politechniki Śląskiej, Gliwice.

- Meidutė I. (2005), Comparative analysis of the definitions of logistics centres, *Transport*, Vol. 20, No. 3, pp. 106–110.
- Michałowicz D. & Pituch M. Regionalne centrum dystrybucji, <[https://mfiles.pl/pl/index.php/Regionalne\\_centrum\\_dystrybucji](https://mfiles.pl/pl/index.php/Regionalne_centrum_dystrybucji)> [accessed: 25.06.2018].
- Miklińska J. (2012), Rola centrów logistycznych w łańcuchach dostaw – wybrane problemy, *Logistyka* 3, pp. 1583–1590.
- Mindur L. (ed.) (2000), *Metodyka lokalizacji i kształtowania centrów logistycznych w Polsce*, KOW, Warszawa.
- Mindur M. (ed.) (2012), *Logistyka. Infrastruktura techniczna na świecie. Zarys teorii i praktyki*, Warszawa – Instytut Technologii Eksploatacji – Państwowy Instytut Badawczy, Radom.
- Rimieniė K. & Grundey D. (2007), Logistics centre concept thought evolution and definition, *Engineering Economics*, No. 4, pp. 87–95.
- Rutkowski K. (2015), Rekonfiguracja międzynarodowych łańcuchów dostaw jako narzędzie zapobiegania zagrożeniom kryzysowym – szansa dla Polski, *Rekonfiguracja międzynarodowych łańcuchów* pp. 92–104.
- Skowron-Grabowska B. (2010), *Centra logistyczne w łańcuchu dostaw*, PWE, Warszawa.
- Skowron-Grabowska B. (2016), Management of supply chain and networks of enterprises, *Gospodarka Materiałowa i Logistyka*, No. 12, pp. 2–11.
- Skowron-Grabowska & B. Kott (2014), Społeczna odpowiedzialność centrów logistycznych, *Zeszyty Naukowe. Organizacja i Zarządzanie*, z. 76, pp. 179–188.
- Stajniak M. (2016), Kierunki rozwoju technologii logistycznych w Polsce, *Zeszyty Naukowe Politechniki Śląskiej. Seria: Organizacja i Zarządzanie*, No. 99, pp. 487–497.
- Stajniak M. & Koliński M. (2016), The impact of transport processes standardization on supply chain efficiency, *LogForum*, Vol. 12, No. 1, pp. 37–46.
- Śliwczyński B. & Koliński A. (2014), *Organizacja i monitorowanie procesów dystrybucji*, Biblioteka Logistyka, Poznań.
- Thies C. (1998), Öffentlich-private Partnerschaft im Verkehrsbereich – das Beispiel der Güterverkehrszentren, *Europäische Hochschulschriften, Reihe 5 – Volks- und Betriebswirtschaft*, Bd. 2324, Peter Lang GmbH Europäischer Verlag der Wissenschaften, Frankfurt-Main, pp. 34–35.

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