A COMPARATIVE LITERATURE ANALYSIS OF DEFINITIONS FOR LOGISTICS: BETWEEN GENERAL DEFINITION AND DEFINITIONS OF SUBCATEGORIES

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Scientific paper

Abstract

Today we still have some doubts about definition of logistics, thus we strive to find a uniform one. As very professionals CSCMP gave definition of logistics which we found not suitable for definition of logistics in general, since it covers only business and industrial area. Our general objective was to find common understanding of the context of logistics as a discipline which will enable better collaboration between multiple entities in different environments, as they can understand and interoperate with each other correctly. With analysis of some logistics subcategories we first created definitions for them and then compared with each other and also with the one from CSCMP. As a result we create new upgradable definition of logistics in general and also found out some common elements of definitions of military and sports logistics, of definitions of business / industrial and agricultural logistics, as well as of definitions of humanitarian logistics and logistics in health care.

Key words: definition, logistics in general, logistics subcategories

1. INTRODUCTION

About the meaning, significance and content of logistics and even on what should constitute it, much has already been written, but discussions on this topic have not yet completed. As a discipline worth of studying, logistics has developed relatively late and therefore it is also relatively young scientific discipline. That is why today we still have some doubts about the definiton of logistics. Of course we do not expect a single definition in the sense that we should always have to use the same words in the same sequence. Uniform definition should

rather primarily clarify the relationship between the elements of logistics and its subsections, which for sure will give us the framework of logistics as a discipline.

At present time, the importance of logistics is increased in many economic branches, especially in industry and business. Logistics is considered to be a science, dealing with the integrated management of all the material and the corresponding information flow from suppliers through transformation of input materials up to the end consumer. Though there is no unified definition of logistics, most of the authors agree with this explanation. The importance and the volume of material and information flow increases especially in the contemporary global environment, when subjects from different countries and continents integrate into production and business. To manage the material and information flow successfully, it is necessary to have a good overview concerning its volume and structure.

Early references to logistics refer primarily to military logistics, which has reached its expansion during both World Wars, when the amount of troops and equipment (and its diversity) increased (Luttwak, 1971; Lummus et al, 2001, p. 426; Tseng et al, 2005, pp. 1659-1660). In the era of relative peace logistics was given the opportunity to penetrate to the business arena, and by the rapid development it has overtaken military logistics (Rodrigue & Slack, 2002, p. 214). We assume, this is the breakpoint of division of its definition and the perception of what elements or activities should logistics include. We can ilustrate this very moment with American Production and Inventory Control Society's (Blackstone, 2013, p. 94) definition of logistics, where it is first described civil logistics and then military:

> *... In an industrail context, the art and science of obtaining, producing, and distributing material and product in the proper place and proper quantities. In a military sense (where it has greater usage), its meaning can also include the movement of personel.*

Council of Supply Chain Managment Professionals (CSCMP) (CSCMP Supply Chain Management, 2014) most closely associated with the logistics profession today defines logistics (management) as:

> *... that part of supply chain management that plans, implements, and controls the efficient, effective forward and reverses flow and storage of goods, services and related information between the point of origin and the point of consumption in order to meet customers' requirements.*

It seems that definition of business logistics today does not include the movement of people anymore. It also seems that definition of logistics in general today is identified primarily by business / industrial logistics. Probably because its development in recent times was the most advanced and thus dictated the pace of development of logistics as a scientific discipline.

The question is: Does the definition of logistics in general include all the elements of today's context of logistics as discipline? We will try to answer to this question with the help of relationship between definitions of logistics in general and with definitions of some of logistics subcategories.

Our general objective of the paper is, however, to find common understanding of the context of logistics as a discipline which will enable better collaboration between multiple entities in different environments, as they can understand and interoperate with each other correctly. In addition to our general objective we will also form overall definitions for some subcategories of logistics: agricultural logistics, tourism logistics, logistics in health care, sports logistics, military logistics, and humanitarian logistics.

2. PROCEEDINGS OF RESEARCH

First, we chose the most modern definition of logistics (already represented in the Introduction), which was formed by CSCMP, the professional organization most closely associated with the logistics profession. We call this definition as a "starting point definition of logistics in general".

In the second phase we have selected some of the areas of logistics, which have recently been very topical: humanitarian logistics, sports logistics, tourism logistics, logistics in health care, and agricultural logistics. We reviewed some of their definitions and contexts in the literature, as well as looking for common features for each area to create common definition for single area, which we call "definition of logistics subcategory".

We have been searching for usable scientific papers on internet over different science databases. Mainly we were focusing on ScienceDirect, Springer, Scopus, Jstor, Sabinet, Emerald and Wiley, were we found over 300 different articles, from which we chose 176 articles suitable for our research. The problem was that they did not always include exact definition about individual logistics subcategory – in many cases they were just refereeing to it, or just mentioning it. Nevertheless we were analysing selected papers to find all definitions and the contexts which then we posted them one after other. We used 26 definitions for agricultural logistics, 35 definitions for tourism logistics, 37 definitions for logistics in health care, 16 definitions for sports logistics, 37 definitions for military definitions, and 18 definitions for humanitarian logistics. We also used some descriptions of concrete actions of each subcategory with the help of other web sources. After that we were searching for common features and differences to create definitions for each individual logistics subcategory.

At the end we posted all definitions of logistics subcategories one after other to search for common features and difference between them and also between starting point definition of logistics in general. The last action was the creation of common definition of logistics in general, which we call the "final definition of logistics in general".

2.1. Results

We chose our starting point definition of logistics in general from CSCMP, which defines logistics management as follows in Table 1.

Table 1 Starting point definition of logistics in general

Reference	Definition	Category
[6]	Logistics (management) is that part of supply chain management that plans, implements, and controls the efficient, effective forward and reverses flow and storage of goods, services and related information between the point of origin and the point of consumption in order to meet customers' requirements.	Business / industrial logistics

Source: Council of Supply Chain Management Professionals

After we analised all the selected papers to find all definitions of selected subcategories we create definitions for individual logistics subcategory as follows in Table 2.

Table 2 Definitions of logistics subcategories

References	Definition	Subcategory
26 definitions [7 – 32]	Logistics in agriculture is an activity that spreads from agricultural product producer to the final consumers in order to satisfy customers' different demands, including the links such as agricultural product production, purchasing, transportation, warehousing, loading and unloading, handling, packaging, processing, distribution and information processing. Agricultural logistics is important part of economy which controls, coordinates and organizes different flows of logistics (information, goods and financial flow). Its important part is physical transportation which has some restrictions due to of its vulnerable of goods (weather conditions have to be met: temperature, moister), transport distances have to be minimized if possible (cause of food hazarding or animal welfare) and traceability (from farm to fork) plays an important role in food safety and consumer confidence.	Agricultural logistics
35 definitions [33 – 67]	Tourism logistics is transportation of people from a place of origin to wanted destination at the exact time, on the same note logistics is responsible for transportation of goods within the whole tourism industry. Logistics in tourism is composed of the carriers, accommodation places, restaurants, sightseeing, man-made attraction ventures, car rental firms and whole setting, décor, appearance of staff, and timeliness of the service received for which it is essential co-operation and co-ordination of different activities and co-ordination of the area.	Tourism logistics

37 definitions [68–104]	Logistics is part of the health care supply chain, consisting of purchasing activities, warehousing, planning, transport, distribution and control. The importance of logistics is reflected in the effective implementation of patient care services by providing real flow of goods / drugs / food / patients / spare human organs, the right information, at the right time with the right equipment / devices / experts and other personel, in the right place, all in adequate quality and the right quantity. In this way, provides logistics support to the health workers and at the same time reducing costs.	Logistics in health care
16 definitions [105–120]	Sports logistics supports the execution of sporting events with a cost-effective organization of environmentally friendly services necessary for the timely execution of the event itself and relate to athletes, spectators and organizational staff, which adapt logistics. Thus, among other things, logistics provides transportation, storage and tracking of necessary equipment, and other sports, during sporting events. It also participates in the creation of a sports event location and accessibility of spectators to the venue. Organizing staff provides the conditions for the execution of the event. It allows the transfer of information through information systems, and implementation of security requirements to ensure the safety of the participants of the event.	Sports logistics
37 definitions [121–l58]	Military logistics is one of the most important disciplines in the field of implementation and support of military expeditions and the development of military strategies. The basic activity of the deals is the safest and quickest possible transport units, storage and transport of equipment and supplies necessary for the maintenance of military operations on the battlefield and back after the completion of surgery. This ensures through a comprehensive capability to fulfill the functions of industrial mobilization, development, finance, administration, procurement, distribution, recruiting, training, testing and removal of unnecessary, making it the assurance of operational capacity. Military logistics is accompanied by a wide range of activities, linking these activities and provides resources that enable activities. Military logistics also include the creation and management of institutions that provide management of combat support forces and related services - the most prominent example of such institutions is military hospitals. Military logistics mainly aim to supply a mobile demand (military units) from relatively static supply sources.	Military logistics
18 definitions [159–l76]	Humanitarian logistics is the process of planning, implementing, monitoring, transport and storage of goods. The flow of information is crucial for control of the whole situation. It can also be defined as emergency assistance to the affected areas and people, who have a number of competent personnel who have the necessary knowledge and at key moments find practical solutions at cost-effective processes. It consists of preparation, response and reconstruction phases. The most important is phase response, because at the time of the rapid reaction it can reduces the potential number of victims. But crucial phase is also prepartaion, which helps to avoid the gravest possible consequence.	Humanitarian logistics

Source: Ours.

At the end we posted all definitions of logistics subcategories one after other (like in Table 2) to search for common features and difference between them and also between starting point definition of logistics in general. We found out, that starting point definition of logistics in general does not include movements / flows of people / personel, while some subcategories do: military logistics, tourism logistics, logistics in health care, and sometimes sports logistics and humanitarian logistics. Agricultural logistics does not include movements of people according to the created definition.

The last action was the creation of common definition of logistics in general, which we call the "final definition of logistics in general". What is common throughout all definitions of logistics (in general and its subcategories) is that …

> *... it entails different activities such as planning, production, purchasing, transportation, warehousing, loading and unloading, handling, packaging, processing, distribution, control, information processing and traceability. These activities in the right proportion are necessary to achieve the basic goal of logistics which is reflected in the effective flow of goods / services / people / information, at the right time with the right equipment / devices / competent personel, in the right place, all in adequate quality and the right quantity in order to satisfy customers. Logistics should also strive to be cost-effective and environmentally friendly.*

2.2. Discussion

Since our research consisted of three phases, first we chose the starting point definition. Despite the fact that there are many definitions of logistics in general we decided to choose the one, that was made by the very professionals i.e. CSCMP. We found out that this definition actually covers the subcategory business / industry, thus we can denoted it as too narrow (or too professional) to cover logistics discipline in general.

The second phase thus entails the analysis of definitions of selected logistics subcategories that are very topical in recent time i.e. agricultural logistics, tourism logistics, logistics in health care, sports logistics, military logistics and humanitarian logistics. These analysis allowed us to create common definitions of logistics subcategories, represented in Table 2 of this paper.

The third phase was made to compare definitions of logistics subcategories with each other and also with starting point definition of logistics in general.

What is common throughout all definitions is that they entail the elements represented in final definition of logistics in general, which include all the elements of subcategories (for example flow of people / personnel / equipment etc.).

While comparing definitions of logistics subcategories we also found out some similarities or common points between definition of military and sports logistics. Sports logistics and military logistics in addition to other entail elements such as storage and transport of equipment during events (games or war) and also during trainings. Personnel participate in the creation of an event location as well as it provides the conditions for the execution of the event. Both allow the transfer of information through information systems, and implementation of security requirements to ensure the safety of the participants of the event. Both mainly aim to supply a mobile demand from relatively static supply sources, since we have to have in mind that sport is still a national category. This means they can both learn from each other and also contribute to development of each subcategory.

We also found out that definition of agricultural logistics is very similar to definition of business / industry logistics, since they both include activities that spread from product producer to the final consumers in order to satisfy customers' different demands, including the activities such as production, purchasing, transportation, warehousing, loading and unloading, handling, packaging, processing, distribution and information processing. Agricultural logistics as business / industrial logistics are important part of economy which controls, coordinates and organizes different flows of logistics (information, goods and financial flow). The important part of both is physical transportation which has some restrictions due to of its vulnerable of goods, transport distances have to be minimized if possible and traceability plays an important role to satisfy customers.

Many common elements have also definitions of humanitarian logistics and logistics in health care, since they both include elements such as planning, transport and warehousing / storage of goods, monitoring / control. The flow of information and competent personnel is exposed in both subcategories. Although definition of logistics in health care does not consists of preparation, response and reconstruction phase we recommend it should.

3. CONCLUSION

Today definition of logistics in general can be recognized in definition of buseness / industrial logistics, since it prevails in the market and its development was the most advanced. Thus it dictates the pace of development of logistics as a scientific discipline as well as its subcategories, and it behaves as a discipline itself.

But as we represented in this paper, definition of logistics by the CSCMP does not include all of the elements, which can be identified in its subcategories, thus can not be definition of logistics in general. Definition in general should include at least these components: planning, production, purchasing, transportation, warehousing, loading and unloading, handling, packaging, processing, distribution, control, information processing and traceability. The basic goal of logistics is reflected in the effective flow of goods / services / people / information, at the right time with the right equipment / devices / competent personel, in the right place, all in adequate quality and the right quantity in order to satisfy customers. Logistics should also strive to be cost-effective and environmentally friendly. Military logistics and sports logistics have some common elements that indicate they should learn from each other and also contribute to both subcategories. The same is with the relation between business / industrial logistics and agricultural logistics, and with humanitarian logistics and logistics in health care.

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