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ADAPTATION OF THE LOGISTICS SYSTEM OF FOOD INDUSTRY ENTERPRISES IN CONDITIONS DIVERSIFICATION OF ACTIVITIES

Kseniya Kovtunenko[1*], Svetlana Filippova[1], Olga Poberezhets[2], Yuriy Kovtunenko[1], Aleksey Stepanchenko[1]

[1]Institute of business, economics and information technology, Odessa National Polytechnic University, Shevchenko Avenue 1, 65044, Odessa, Ukraine
[2]Faculty of Economics and Law Odessa National University by I.I. Mechnikov, Dvoryanskaya 2, 65082, Odessa, Ukraine

[*]e-mail: k.v.kovtunenko@mzeid.in

Abstract

Under conditions of market position complicated maintenance, the enterprise activity diversification strategy of food industry enterprises, which implementation requires the adaptation of all the enterprise's systems, becomes especially relevant. The most sensitive from among those systems when diversification is the logistics one that, in spite of changes, aiming to maintain competitive advantages, is functionally expected to minimize costs.

The aim of this study is to Identifying both advantages and disadvantages of practical measures for the logistics system adaptation under of food industry enterprise's activities diversification. In the work was suggested that the optimization of logistics system should be completed by its assessment. Since this system doesn't operate on its own accord and is part of the company, its assessment should be coordinated with the assessment of the effectiveness of the company in general. In the article was revealed that the typical problem for Ukrainian of food industry enterprises is a misalignment between logistics system and the strategy of the company and it is hard to find ways of solving this problem. In the article are presented main reasons why the logistics system needs to be optimized, including: negative trends in the enterprise, the deterioration of its main activity rations; structural changes; the impact of external factors; substantial changes or adjust in the company strategy. Also, in the article is noted that in practice it is very difficult to get maximum benefit from optimization of logistics system. This is due to the lack of open information flows at Ukrainian of food industry enterprises. Some peculiar information about the enterprise is only obtainable by a limited number of people who usually occupy managerial positions and are not involved in primary processing of information, but only coordinate decisions on the basis of reports that are drawn up by their subordinate workers. In addition, some managers and workers are against any change that significantly slows the process of optimization.

A special attention should be paid, under of food industry enterprises activity diversification conditions, to the enterprise's logistics system adaptation to new circumstances that shall ensure reduction of undesirable extra costs, market positions consolidation, and the customer service quality improvement. Advisable is devoting subsequent studies of the problem of the enterprise logistics system function in the conditions of activity diversification to the resource flows direct adaptation using of foreign and domestic companies' experience

***Key words**: Logistics system, Strategy, Diversification, Elements, Adaptation, Food industry enterprises.*

1. Introduction

In globalization-related changes context, all economic actors' competition becomes more intensive. The food industry enterprises are facing conditions characterized by their originating factors polarity, which require the enterprise to search for new sustainable markets. Under such circumstances, enterprises need diversification of their activities in order to reduce various risks' impact. Diversification process complexity is due to the need for existing resources accumulation, and when necessary, need to attract external resources,

to acquire new knowledge, thus adapting the management system to new operating conditions. Here a particular attention should be paid to the enterprise's logistics system, expected to be flexible and ready to provide cost minimization, even in the enterprise activity diversification conditions.

For Ukrainian of food industry enterprises are facing conditions characterized by their originating factors polarity, which require the enterprise to search for new sustainable markets enterprises, the problem of disagreement between the enterprise's logistics system and diversification strategy along with the lack of its efficient adaptation directions is characteristic. In addition, rather exception when a rule is to analyze whole logistics system individual elements.

The question of logistics system functioning at enterprises has been studied by numerous domestic and foreign researchers. So, Zborovska, [1], Klunko, [2], Kornelius, [3], Hiltz, [3], and others considered economic and organizational methods of logistics systems management (focusing on production elements). Karpova, [4], Abramova, [4], Mitunevich, [5], Sheven, [6], and others emphasized the environmental elements of the logistic system. Mamonova, [7], Sverchkov, [8], and others analyzed the logistics system based on the enterprise strategy. Still the logistics system has not yet been considered in the activities diversification context.

Selecting its diversification strategy of food industry enterprises must clearly understand that failure to implement an efficient logistics system it is impossible to realize all its market potential. But, in practice, a large number of enterprises does not pay due attention to this system adaptation to the conditions that are characteristic for activities diversification process, that resulting in losses that could have been avoided.

2. Defining and characterizing in order to adapt the logistics system in the activities diversification conditions, the measures which could be used in practice of domestic of food industry enterprises

2.1 Policy of diversification of activity of food industry enterprises in the context of the logistic concept

In recent years, due to the growing role of logistics, of food industry enterprises are increasingly focusing on the logistics system that can serve in basis to obtain competitive advantages by reducing the resources cost and, as a result, increase profits [3]. The use of logistics at of food industry enterprises helps to reduce the production cycle as a whole, and at each of its separate stages, from the raw materials receipt and up to the manufacture of ready final product for the consumer. The logistics system must take into account all the enterprise environment external and internal factors being thus professionally considered as an important strategic management element.

When of food industry enterprises has not sufficient resources to counterbalance the competitors' strengths and use inflexible strategies, then it may for a long time lose the ability to maneuver in the market. Therefore, in practice, often used is the diversification strategy, allowing the company to avoid in its activities the dependence on only one factor.

The complexity of introducing a logistic concept in of food industry enterprises that uses the policy of activities diversification is that all elements of production and management should be regarded as one single system interconnected parts, given that changes in any element shall give effects to the functioning of others. While the logistics system formation for an enterprise one-field targeting its activity can be done on the basis of typical schemes (supply-warehouse-processing-warehouse-sales), when diversification, that scheme will get certain specificity at the production cycle different stages (depending on the diversification type).

The expediency for logistics system adaptation can be justified by the following important reasons: negative tendencies in the enterprise operation, deterioration of its main activity indicators; structural changes; external factors influence; change or significant adjustment of the company's strategy.

The logistics system should be oriented, first of all, to increase the enterprise's financial result that will promote the growth of economic potential and gaining advantages over competitors.

Logistics system of food industry enterprises, regardless of its activities type, should be considered as a set of subsystems: procurement, production, warehouse, and sales. These subsystems are characterized by separate features and perform various functions, being at the same time interconnected by a single purpose. A separate specific one should be noted the informational logistics, which optimizes the information flows movement interconnecting with all other subsystems.

2.2 Types of diversification strategy and their impact on the logistics system of food industrial enterprises

Let we consider the main types of diversification strategies and their impact on the logistics system of food industrial enterprises: vertical, horizontal, and conglomerate [6], Table 1.

One can conclude that, regardless of its type, the diversification strategy complicates the logistics system work. Therefore, that system adaptation is a topical issue.

Table 1. Diversification types (summarized by the author)

Diversification types	Content	Difficulties to implement
Vertical	Manufacturing product related to technologies existing at the enterprise and oriented onto new consumers	At distribution over market stage, due to the necessity to develop new logistic ways for ready product delivering to the end consumer
Horizontal	Manufacturing new product not related to the enterprise main activities and oriented onto existing consumers	Need for complete revision with adjustment. Strategy implemented will result in increase in suppliers related that involves a complication with supplies system analysis as the existing logistic system has to take into account alternative variances with resources supplies. The warehouses can be inappropriate for mew product categories storage either not adapted for increased product volume storing. The new product manufacturing can depend onto some given equipment or technology introduced, Possible restrictions with new goods delivery to the end consumer due to the relevant transportation conditions or technical means need/absence.
Conglomerate	Oriented onto the enterprise new activity area introducing not related to the main activity field	The logistics system also should be cardinally revised becoming more operative and flexible otherwise being incapable to provide its main goal of delivering the demanded goods required quantity in some given point within some given cost limits for a given consumer

2.3 Adaptation of the logistics system in the conditions of diversification

The logistics system should ensure coordination between all subsystems of the enterprise, optimum resources use, manufactured products quality and rapid response to environmental changes [7].

To adapt the logistics system functioning expedient is to separately consider its main elements: information, legal, production, technological, environmental, organizational and economic.

Information elements are the basis for making any decisions in the logistics system management. While implementing the diversification strategy (regardless of its type), information flows increase, there arises a need to handle more complex and bulk information regarding raw materials supply, product manufacturing, storage and shipment. In addition, new technologies, goods or activities introduction requires a detailed correlation of these innovations with the main direction of the enterprise's activity. Therefore, the logistics system adaptation should begin with the renewal of obsolete techniques used for the accumulation, analysis and storage of information and related software. Thus, the received data processing will be accelerated and the probability of errors occurrence will decrease, that in turn will enable avoiding situations where the information flow lags behind the material one. Only by adjusting the information processes one can proceed to use the logistics system quality indicators.

Legal components relate mainly to the materials purchase, but in the diversification process, when new technologies, products or activities are implemented at the enterprise, it is necessary to clearly see all legal aspects of these measures in order to avoid possible violations stipulated by law and capable to involve penalties if any breach. A full legal support of the logistics system allows improving the enterprise's commercial and production activities as a whole and to establish discipline at all hierarchic levels of the logistics system (even at individual workplaces). When implementing a diversification strategy, there may be situations that are not typical of the enterprise and can never be regulated by existing legal norms. It is recommended to develop instructional and legal materials including bases of the enterprise general activity legal regulation supplemented by norms concerning innovations. It is also advisable to provide guide on the behavior of management and production personnel in the case of farce-major circumstances, since in practice the staff usually has a small amount of legal knowledge that can lead to incorrect decisions by management personnel.

Production elements are responsible for regulating various production cycle stages reducing machinery and equipment downtime, adjusting stocks and production volumes. In the diversification strategy implementation process, undesirable is separately considering the production increase due to innovations, since it forms part of the enterprise's activity and aims at achieving the main goal of the enterprise's operation.

In this case, necessary is to create a single internal production logistics system, which would combine all processes related to production. However, in today's environment, the company is constantly dealing with uncertainty and a changing market. Mastering a new technology or product always increases the likelihood of unforeseen situations. Therefore, while diversifying the company's activity, it is rational to organize a logistics audit that analyzes uncertainty in several areas: uncertainty regarding supply, sales and management. Based on that audit results, possible is to develop directions for adaptation of the logistics system itself and the production activity of the enterprise.

Today, most enterprises use outdated technologies not only in the logistics system, but also in other areas of their activities. Innovative technologies are becoming more and more relevant, since otherwise it is very difficult to maintain good market positions. The diversification strategy is always associated with the enterprise activity complexity increase that requires the search for new management technologies (especially in the logistics system, which accounts for almost 90% of all enterprise costs). In modern conditions of information technologies development when speaking of logistics system it is recommended to use both internet technologies and extranet technologies.

Internet technologies provide for the creation of an internal information exchange system at the enterprise, accessible only to the enterprise employees. Such technology is convenient for horizontal diversification, since it will allow processing information about suppliers promptly and facilitate cooperation between staff.

Extranet technology is a system where apart of relevant staff the access to information also is granted to individuals with appropriately delegated rights [8]. This technology is convenient for vertical diversification targeting new consumers. Theoretically, it can be considered a "business card" of the company, serving for feedback with the consumers and those consumers informing with all the necessary or desirable data.

In the conglomerate diversification case, the technology choice is according to the company management preference. It depends on which policy the company respects in its core business: Internet technology is convenient for maintaining corporate secrets, and extranet technology is used when open policy prioritized.

Using the new techniques or equipment for goods production and expanding production for new product types manufacturing, the company is increasingly polluting the environment [9]. Despite the economic-environmental contradiction (the logistics system task is to minimize costs, while the environmental situation requires additional costs), the company can never ignore its responsibilities to society in terms of maintaining environmental cleanliness. Therefore, it is recommended to use recycling techniques, i.e. the reiterative processing of waste with its further reuse. This approach will reduce the negative impact on the environment and save on the resources reuse [4].

Mandatory for the logistics system when implementing the diversification strategy is its organizational structure reorganization. Typical linear arrangement subdivisions-structured will not be able to cover all aspects of the system, being inflexible and having little adaptation to changes. The use of matrix organizational structure, combining linear-organizational and design-target structures, will be optimal. The matrix structure will allow faster implementation of the current management, also it reduces costs and increases the resources use efficiency.

The diversification strategy implementation requires significant additional costs and expands the enterprise activity scope. The logistics system economic elements are aimed onto analyzing and optimizing the interconnection between the work and the activities related both to the main activity and to the innovations at the enterprise strategy [2]. It is recommended to use network planning, which will allow systematically and promptly present processes of the enterprise work, their management and resources maneuvering. Network planning is convenient to use in preparing the development of new products types production or a new type of activity in general. It is based on the use of economic and mathematical models (network models), the simplest of which is the network schedule. Using these models saves time and resources, accounting for possible difficulties and clarifies the company overall activities [1].

The proposed measures to adapt the logistics system in the enterprise of food industry enterprises diversification strategy implementation are presented in Table 2.

As can be seen from Table 2, the logistics system adaptation should be carried out separately for each of its elements, but the key significance will result just from the overall result. If measures are taken only on one of the system elements or not coordinated by different elements, the adaptation will be ineffective. For example, the company decided to use at logistics system the Internet technology, but information elements remain not updated. As a result, new technologies will not be able to produce useful effects expected by management although the company bears additional expenses for the development of new technology. Also important are the conditions under which the logistics system adaptation takes place. So, for the horizontal diversification strategy, the Internet technology will be optimal, while for the vertical the same will be the extranet one.

Table 2. Measures to adapt the logistics system in the enterprise diversification strategy implementation

Adaptation measures	Logistics system element	Types of diversification strategies for which a given adaptation tool is recommended	
Upgrading outdated computing equipment and software	Informational	All types	
Guidelines, instructions and legal materials development	Legal	Horizontal and conglomerate	
Logistics audit carrying out	Productional	All types	
Internet and Extranet technologies using	Technological	Horizontal vertical	conglomerate
Recycling implementation	Ecological	All types	
Matrix organizational structure	Organizational	All types	
Network model of planning and management	Economical	Horizontal and conglomerate	

Source: (developed by the authors on the basis of [2, 4, and 6].

In general, the measures presented in the table can be rationally used for any diversification types (with the exception of several items). The maximum effect will be obtained when optimizing all elements of the logistics system. However, the management may at its discretion ignore some of them if the unchanged system element was previously functioning effectively or if the enterprise is limited in resources to implement of all measures.

Adaptation of the logistics system should be completed with its evaluation. Since, this system does not function by itself, but it is part of an enterprise, its assessment must be consistent with the assessment of the company effectiveness as a whole [10]. To this end, it is proposed to use the following list of evaluation criteria: logistics operations costs; logistic cycles duration; return on investments in the logistics system; costs for logistics management; losses incurred by the enterprise due to irrational decisions made within the logistics system framework; logistics system performance.

In practice, it is very difficult to maximize the effect of logistics system adaptation, due to the lack of open information flows at Ukrainian enterprises. A part of the data relating to the enterprise's activities is available only to a limited number of top managers who usually holding their senior positions do not participate in the initial information processing, but only coordinate decisions based on reports made by their subordinate employees. In addition, some executives and employees oppose any changes that significantly slows down the process of adaptation.

3. Conclusions

- The analysis of new and updated existing logistic models is based on the accumulation of a certain knowledge amount, the ability to predict negative phenomena and to eliminate their consequences. Adapting of food industry enterprises logistics system work allows reducing the costs and improving the customer service quality that helps the company to consolidate its market position.

- The logistics system adaptation should be carried out according to individual elements and taking into account the enterprise strategy, that will provide an opportunity to get synergistic effect. The diversification strategy involves large-scale changes in the enterprise activities, and therefore the logistics system should be reorganized in several directions.

- It should be remembered that the logistics system is part of the enterprise and can never function separately, so all measures that logistics implements should be consistent with other enterprise's systems.

- Subsequent research into of food industry enterprises logistics system functioning under diversification would be advisable in the area of resource flows direct adaptation using foreign and domestic experience.

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