The concept of logistics management in the enterprises – now and the future

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ABSTRACT

The concept of logistics management has been functioning in literature of the subject and economic practice for numerous years, and it has developed research methods related to other disciplines of knowledge. The realities of current global economy force the enterprises to consider the sustainable development concept as well. This concept, by assuming sustainability in implementation of economic, social and environmental objectives, exerts impact on the management strategy of contemporary enterprises. This also results from the advancing globalization and the increasing scale of production along with negative phenomena that emerge in the environment and economy, i.e. environmental degradation and depletion of resources. Hence, the sustainable development concept may be sought first of all in strategies adopted by manufacturing enterprises, the operations of which are based on technological processes, distribution and sales, as well as post-sale services and the possibility to manage the final products or reuse of the materials.

Keywords: management, logistics management, enterprises, globalization

1. INTRODUCTION

The strategies for sustainable development of manufacturing enterprises imply the strive for improvement in operations and acquisition of additional economic and ecological benefits. It is also significant within the strategic operations carried out by the enterprises to develop and
maintain the competitive advantage, and to limit the adverse environmental impact exerted by the products and services, reduce the consumption of materials and energy and decrease the amount of waste and emissions [1].

Therefore, the reverse logistics is embedded into the concept of sustainable development of enterprises [4].

The analysis of the literature of the subject, identified a certain mismatch in the approach to the subject of the reverse logistics. In the international literature, the subject of reverse logistics is posed by waste and defective products, while the literature mentions the reverse logistics concept first of all in terms of the waste. This, its basic objective is to shape the flows of different materials and products in a direction opposite to forward flows, the strive for reduction of the amount of generated waste, to minimization of the adverse impact exerted by the waste on the natural environment and effective use of the waste that are recyclable through management [5].

However, it should be noticed that both the international literature and economic practice have recently pointed to a clear growth in interest with another dimension of the reverse logistics concept, which is related to the defective products’ flows emerging in a form of returns. However, the returns may be also related to the products of full value. Then, they are grasped in forward flows, so they do not constitute a subject of reverse logistics. In turn, the returns of defective products, which are often characterized with an advance stage of life or its end, supply the reverse flows. The purpose of this is to use their value or manage them in another form. The value recovery from defective products is an objective for implementation of the reverse logistics processes in manufacturing enterprises [6].

The strive for ordering the terminology, specifying the essence and determining the practical application of the reverse logistics process related to the defective products in management of manufacturing enterprises have become a premise to raise the topic of this work [7]. Regarding the scope and terminological complexity level of the themes in question, the following was assumed for the need of drawing up the work: A defective product is each product that is not waste, which however does not meet the quality and/or functional requirements against which it was manufactured, on various stages of its life.

The reverse logistics of defective products in management of manufacturing enterprises is brought down in the theoretical part to defective products’ flows management in those enterprises. As the defective products’ flows management is identified with logistics management, narrowed down in this context to implementation of reverse logistics.

Within the scope of reverse flows of defective products within manufacturing enterprises, these products are subjected to the reverse logistics processes, i.e. gatekeeping, collecting and gathering, controlling and sorting as well as final disposal.

Reverse flows of defective products are called the defective products’ flows interchangeably with the term of reverse flows.

This monograph is of an epistemological and empirical character. Its originality and innovative character are mainly related to the subject of the studies, i.e. the defective products, of the selected research background, i.e. the manufacturing enterprises, and the combination of the reverse logistics concepts with the defective products’ flows management.

The main purpose of the monograph is to carry out an analysis and evaluation of the reverse logistics processes in the scope of the defective products’ flows management in the Polish manufacturing enterprises [8]. The performed empirical studies are highly significant, and while supported by the mentioned theory they allowed reaching the main goal,
detailed with particular objectives: Determination of new areas of reverse logistics in the manufacturing enterprises;

- Conceptualization of notions and determination of the scope and specificity of the defective products’ flows in the manufacturing enterprises, with specification of the reverse logistics processes as the basis for implementation;
- Development of a descriptive model of reverse logistics of defective products, and its verification in the researched manufacturing enterprises;
- Determination and evaluation of interdependencies between description of the defective products’ flows in the manufacturing enterprises and results of the reverse logistics;
- Find out whether the differences in evaluation of the main returns categories and actions of the reverse logistics related to the defective products’ flows management are statistically significant in the groups of manufacturing enterprises selected according to the number of their employees [9].

2. LOGISTIC ASPECTS IN CONTEMPORARY MANAGEMENT (by Vietnam enterprises)

![Management Functions](image)

Figure 1. Management functions

Economic conditions and reality that contemporary enterprises are forced to operate in are changing in a highly dynamic manner and are dramatically different from those that dominated a dozen of years or several decades ago. Therefore, the enterprises must be capable of adjusting to the changes that take place, as this adaptation attribute guarantees not only their development but also existence. Thus, the current approach to the matter of enterprises management, which apart of being based on the traditional forward theory, which it derives knowledge and inspiration from, must be complemented and extended on ongoing basis so the enterprises can adjust to the contemporary economy [10].

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Currently, one of the most important challenges that must be faced by the enterprises and various economies is to implement a sustainable development concept. It strives for an integrated economic, social, environmental, spatial as well as institutional and political order. This order determines and creates reality by formulating conditions and objectives for all actions in the economic, social and environmental scope. Hence, it seems justifiable to refer to the definition of sustainable development and management functions (Figure 1).

In its basic, statutory definition, it is found out that the sustainable development is such socio-economic development which integrates political, economic and social actions, with preserverance of natural balance and stability of basic natural processes, in order to provide for a possibility to fulfill basic needs of particular communities or citizens, of both the contemporary and future generations [2].

The sustainable development concept is to develop some correlations between social, economic and ecological needs along with their development (figure 2).

![Diagram](example.png)

**Figure 2.** Social, economic and ecological needs in the sustainable development concept

Vietnam’s position on the Logistics Performance Index (LPI) in 2018 has risen 25 places in two years ago to 39th out of 160 surveyed countries (Figure 3).
Figure 3. LPI 2018 score (place of Vietnam enterprises)

Figure 4. Relationships of an enterprise with sustainable development

The sustainable development concept, implemented in the enterprises’ operations, is of special significance for their management. The enterprises undertake implementation of the sustainable development concept being aware that they exert intensive influence on the environment by utilizing natural resources, emitting pollution or generating waste, and the
expectations towards their operations are focused on the trends towards limitation of use of materials and resources and improvement of contribution to the social life. Furthermore, the still increasing social awareness regarding the natural environment protection is reflected in greater expectations and requirements of customers towards the enterprises. At the same time, the enterprises themselves seek manner to develop and strengthen their competitive advantage, looking for solutions in implementation of eco-minded activities that consist in among other reduction in materials and energy consumption, creation of new sales markets and utilization of their management possibilities, expansion of the products’ and services’ life cycle and broadening of their scope or co-creation of the social well-being [11].

However, to place the sustainable development concept in management of contemporary enterprises, it is necessary to analyze the contemporary concept of enterprises management along with determinants that shape it (Figure 5).

![Figure 5. Logistic market in Vietnam (2007-2014)
Source: Logistics Performance Index, World Bank](image)

To a high degree, management in contemporary enterprises depends on their proneness and adaptive skills regarding the transformations in civilization, cultural, social and economic areas, which influence all aspects of their operations and are characterized with novelties, high pace, intensity and complexity, and thus are difficult or unpredictable. Premises that refer to sustainable development and decide directly on change of assumptions in the enterprises
management are related to: development of new organizational forms, dynamic development of new technologies, escalation of competition, intensification of the globalization processes, increase in actions on international markets, concentration on customers’ requirements and needs, emergence of new markets and disappearance of the existing ones [12].

While undertaking the relationship context of the presented assumptions, it is necessary to state that the basis of sustainable development is development of new organizational forms, e.g. networks, which by formulating the cooperation objective strive for implementation of sustainable development of networks. Similar interdependencies also exist in relation to new technologies and competitiveness or other assumptions [13].

Analyzes related to the evolution of globalization processes remain in the direct context, continuously leading to uniformity of markets and creating global competition and the need for enterprises to adjust to the international environment’s conditions. Globalization caused the need to introduce changes in the organizational management, and the process of that changes takes place on several plains:
- structural - visualization,
- work systems - flexible systems,
- competence - creation of new knowledge,
- technology and organizational procedures - e-business,
- values - corporate social responsibility, CSR (Figure 6).

![Figure 6. Vietnam’s Logistic Market – investment in Vietnam](image)
Source: General Statistics Office of Vietnam
The sustainable development may be directly positioned in the corporate social responsibility. This means that globalization changed the manner and models for organizational operation dramatically, and caused that numerous standards and rules that were in force previously in the field of management have changed to a considerable degree. The standards and rules that were modified are especially related to sustainable development (Figure 7).

**Figure 7.** The parts of logistics system in modern enterprises

The turbulent character of economic changes causes significant economic transformations, and as it is impossible to impose any boundaries in the economy, these changes - emerging with unpredictable intensity - penetrate various elements of its theory what is reflected in the new, currently appearing concepts, one of which may be the sustainable development [14].

These concepts integrate with management processes because of the common objective determined within the sustainable development concept. Objectives and benefits that arise from implementation of the sustainable development concept in enterprises are presented in Table 1.

The transformation process of the traditional approach to management takes place slowly. However, it should be observed that generation of new theories does not correspond to their
immediate practical application - there is a need for a certain implementation delay, which is inevitable as the management sciences are of an application nature that is the main priority for their development. The sustainable development is a typical example of the need to develop a concept because of dynamics of economic development along with negative results of those operations (Table 1).

**Table 1.** Basic objectives and benefits that are characteristic for each dimensions of the sustainable development concept implemented in enterprises [15].

<table>
<thead>
<tr>
<th>Dimension of sustainable development</th>
<th>Basic objectives of enterprises</th>
<th>Benefits for enterprises</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic</td>
<td>- increase in efficiency,</td>
<td>- balance in the</td>
</tr>
<tr>
<td></td>
<td>- greater security of</td>
<td>surroundings,</td>
</tr>
<tr>
<td></td>
<td>business,</td>
<td>- good reputation</td>
</tr>
<tr>
<td></td>
<td>- safety of recipients,</td>
<td>of the enterprise,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- higher level of well-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>being of the closest</td>
</tr>
<tr>
<td></td>
<td></td>
<td>social surroundings</td>
</tr>
<tr>
<td>Social</td>
<td>- greater satisfaction of the</td>
<td>- greater demand for</td>
</tr>
<tr>
<td></td>
<td>recipients,</td>
<td>products,</td>
</tr>
<tr>
<td></td>
<td>- competitiveness in relation</td>
<td>- certainty of deliveries</td>
</tr>
<tr>
<td></td>
<td>to the remaining energy</td>
<td>of the final product</td>
</tr>
<tr>
<td></td>
<td>carriers,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- strengthening of the</td>
<td></td>
</tr>
<tr>
<td></td>
<td>brands’ position</td>
<td></td>
</tr>
<tr>
<td>Ecological</td>
<td>- reduction in the pollution</td>
<td>- smaller or not</td>
</tr>
<tr>
<td></td>
<td>emission level,</td>
<td>environmental penalties,</td>
</tr>
<tr>
<td></td>
<td>- not exceeding the granted</td>
<td>- greater level of</td>
</tr>
<tr>
<td></td>
<td>limits,</td>
<td>achieved profits,</td>
</tr>
<tr>
<td></td>
<td>- adopting the production</td>
<td>- increase in the</td>
</tr>
<tr>
<td></td>
<td>technology that is friendly to</td>
<td>company’s value,</td>
</tr>
<tr>
<td></td>
<td>the environment and resident,</td>
<td>- good reputation of</td>
</tr>
<tr>
<td></td>
<td></td>
<td>the enterprise</td>
</tr>
</tbody>
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The review of literature of the subject suggests that both the practitioners and theoreticians that deliberate the management theory, while being aware of the consequences of emerging changes, seek new management concepts in an active and intensive manner. Numerous scientific papers in that field emphasize that the management sciences use the knowledge on the principles of enterprises’ operations and development along with the management rules. Based on that, the development of theory and practice on the management sciences contributes to changes of a differentiated character (Figure 8).
The contemporary management concepts allowed undertaking the attempt to specify their four main components, which while influencing one another create a model of a perfect enterprise (sustainable enterprises). These components that are responsible for the permanent success of the enterprises are: trust, knowledge, innovation and entrepreneurship. Hence, the model approach is identified with the sustainable development.

The sustainable development aspect is intended to improve effectiveness of enterprises both in the technical and economic dimensions as well as in the social sphere. This is turn brings the need to connect the “hard” management elements such as a strategy, structure, operation systems, with the “soft” ones, i.e. a mission, culture, leadership, people, and first of all the need to consider the reactions from the stakeholders towards direct effects of the enterprises’ operations [3].

Exposure of the sustainable development by enterprises requires consideration of such attributes as: flexibility and the ability for innovative and quick adaptations, innovativeness, entrepreneurship, intelligent actions, skillful knowledge management and gathering of intellectual capital. Evolution of those attributes shaped the contents of the new approach in the management sciences. Therefore, a part of constant transformation taking place in the organization and its surroundings, these are the attributes that are treated as conditioning the effective management, allowing the achievement of assumed objectives.

All the listed attributes of contemporary enterprises are embedded in the sustainable development concept. The greatest impact on the final shape of the concept is exerted by: flexibility, innovativeness and entrepreneurship [16].

Currently, the management is based on the organization’s ability to deal with the constant change, organization of networks, establishment and development of relationships with partners.

**Figure 8.** The parts of logistics system in modern enterprises
Source: Mordor Inteligence
or concluding alliances and creating a strong market position thanks to competitive advantage. Therefore, it might be assumed that the organizational development in the 21st century will be first of all directed at increase in entrepreneurship, innovation and competitiveness. The intellectual capital will also be of great significance, covering among others the well-educated and experienced employees, who thanks to the held skills will be capable of designing modern production and service provision systems, or develop new management techniques that will allow to meet the customers’ expectations.

The above deliberations justify the statement that contemporary management in based on numerous different variables, which are related to the areas connected with economy, society and environment. Thus, the contemporary management concepts, while implementing the actions from those three areas, at the same time consider the priorities of the sustainable development concepts. Globalization, growth and dynamics of production, reduction in products’ life cycles, diversification and specialization of production, technological and research development, innovation processes, depletion of natural resources, degradation of the environment and many other factors cause the need to plan and direct the development.

This is intended to prevent the regress, and it leads to permanent use of all available capitals and resources, as well as to consolidation of results from developmental actions. The sustainable development mechanisms are necessary to maintain the results of the developmental actions, as development essentially takes place in a non-sustainable manner [17].

The sustainable development concept is implemented in the enterprises in a form of a strategy, very often posing a substitute for the previous main developmental strategy or its complementation with environmental and social issues. The sustainable development strategy may pose a general strategy of an enterprise or one of the main functional strategies. Then, there might be other functional strategies, executing other groups of the sustainable development priorities (e.g. social) or horizontal functions of an enterprise (e.g. sales). However, it is always necessary to integrate it with the hierarchy of objective in an enterprise, implemented developmental strategies and operational practices, so it is possible to achieve the assumed effects.

The discussed sustainable development concept is currently a standard of manufacturing and market behaviors for numerous states and economic units. What is more, it influences the consumers’ behaviors, who, while being more aware, impact the production of enterprises to an increasing degree. This causes that both the strategies and methods of production operations are re-evaluated [18].

A special case in the analyzed sphere is posed by manufacturing enterprises, which base their key operational parameters on the products, material and energetic resources, adopting in the manufacturing process, manners of storage and distribution, post-sales services, possibilities for final disposal of products, their re-use or recycling, etc.

All of those processes can be significantly reflected in the potential for seeking the possibilities for production dematerialization, reduction of its energy consumptions, introduction of low-emission and waste-free manufacturing system, limitation of dysfunctions of products in their life cycles, generation of material and power feedback and their use to supply some new cycles.

These actions combine economic and ecological benefits, and indirectly also some social advantages, thus they pose a determinant for a specific direction for the manufacturing enterprises management [19].
3. CONCLUSIONS

Management of contemporary enterprises in the present economic reality undergoes continuous transformations. There is a need to consider the notions of sustainable development, globalization processes, changes in the social attitudes directed at ecologic preferences or dynamic development of markets in the management of enterprises. Therefore, it is so crucial to seek, select and employ the most innovative ways allowing the adjustment of the management of enterprises to those changing conditions.

The production enterprises, as entities that are especially prone and sensitive to changes in the economy, have recently developed the concept of reverse logistics, the processes of which provide significant support to the defective products’ flows management.

The studies performed as a part of the work proved that the defective products’ flows management in the manufacturing enterprises is employed through implementation and utilization of the reverse logistic processes which allows managing the returned products effectively. Apart from that, certain postulates and statements may be drawn up:

Economic sustainability and market development generate the need to implement and employ modern solution in the scope of the defective products’ flows management in the manufacturing enterprises.

The reverse logistics processes, supported with adequate decisions regarding the defective products’ flows management, improve operations of the manufacturing enterprises;

For the enterprises, the proposed descriptive model of the reverse logistics of defective products is a basis that can be adapted to their needs what was proved by the verification carried out in the researched enterprises.

Both the intensity and quality of the reverse logistics processes, as well as the level of results from management of those processes, implemented in the field of the defective products’ flows, depend on the size of the manufacturing enterprise what was proved by the performed statistical research.

The threads raised in the theoretical part were intended to outline the context for implementation of the reverse logistics in the defective products’ flows management in the manufacturing enterprises.

References


