

IMPROVEMENT OF WASTE MANAGEMENT (REVERSE LOGISTICS) PROCESSES IN THE LITHUANIAN ARMED FORCES

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In 2015, the United Nations Department of Economic and Social Affairs presented in its annual report that worldwide, as the population increases, the demand for land, food and important natural resources in 2030 will be twice as high as the same needs in 2010 (United Nations Department of Economic and Social Affairs, 2015). Unfortunately, the developing global economy contributes to the destruction of the earth's resources to a large extent. Most companies still tend to operate in a linear take-make-dispose economic model. With this linear approach, companies don't worry about what happens to the product when it's thrown away after its end-of-use.

Official statistics show that more than half of the generated waste is still buried in landfills, and some hazardous waste is not properly identified and disposed of without proper recycling. This way of waste management is outdated and has a huge negative impact on the environment. With the tightening of the European Union's waste policy, the aim is to prevent the generation of waste, and the majority of waste to be recycled and used at least once more.

Therefore, it is not surprising that more and more attention is paid to those looking for better resource and process efficiency in different areas of production and at different stages of consumption, and to those who use the principles of circular economy. Circular economy principles not only encourage reducing or eliminating waste and pollution, maximizing the efficiency of product and material use, but also promote the natural regeneration of systems (Geissdoerfer et al., 2017). Esposito et al. (2018) believe that one of the most difficult parts of the circular economy is reverse logistics, where the most difficult part is managing the collection of waste from consumers in order to capture value and turn materials back into resources. Reverse logistics differs from waste management in that it focuses on adding value to the used product. Waste management mainly involves the collection and treatment of non-useful waste. Applying the principles of reverse logistics can significantly reduce the amount of unused waste.

Reverse logistics is a subject of much research, but it should be noted that the research is mainly based on operational and economic optimization goals, not on environmental issues. The

conclusion of the research made by Rogers (2001) is that the logistics costs for the processing of returned products can vary from 4% to 9.49% of the total logistics costs. In the retail and manufacturing sectors, reverse logistics is estimated to account for around 5-6% of total logistics costs. Reverse logistics requires large investments and a large share of logistics costs.

Despite the differences in structure, the basic issues and processes of reverse logistics management in industry, commerce and military are almost the same (Blumberg 2005). The ecological idea of reverse logistics is not, and probably never will be, a major aspiration of the military, but reverse logistics could be economically beneficial for the military as well (Hajna and Ovesny 2011). Much of the research and application of reverse logistics in organizations is done for financial gain. Some strive for this by directly recycling waste, thereby obtaining cheaper raw materials for new products, others integrate ideas of environmental friendliness into their marketing programs and thereby increase sales. It is important to create or adapt a model that best suits the interests of the organization, when reverse logistics can bring economic and ecological benefits.

There is not much information about waste management in the Lithuanian armed forces, which indicates that it is an under-researched area. Waste should be managed in a transparent and ecological manner so as not to reduce public trust in the Lithuanian armed forces.

This article analyzes the waste management system of the Lithuanian armed forces with the aim of analyzing the current waste management model of the Lithuanian army and proposing a new conceptual model based on the advanced principles of reverse logistics. In order to achieve this goal, the first part of the article reviews the theoretical and practical aspects of the application of reverse logistics. In the second part, the results of the analysis of the waste management system of the Lithuanian Armed Forces are presented, the factors and reasons determining one or other features of the functioning of this system are discussed. The third part of the article presents proposals for a conceptual model of waste management based on the principles of reverse logistics. The article ends with summarizing conclusions.