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MANAGEMENT OF REVERSE LOGISTICS IN THE SUPPLY CHAIN

Volodymyr Marchuk, Lidia Savchenko, Oleg Harmash. *"Management of reverse logistics in the supply chain". The article considers the issue of return flow management in supply chains. Recently, this problem has become particularly acute due to growing economic losses and social, economic and security threats, a sharp increase in the return of unused, substandard, end-of-life products, hazardous and hazardous waste, materials for recycling and regeneration. This link of business processes was not even distinguished in the structure of the supply chain before.*

Based on the analysis of the theory and practice of recycling, resource conservation, recycling and disposal, the authors concluded that it is necessary to form a closed supply chain with the participation of reversible flows and based on the concept of product life cycle.

The example of Ukraine illustrates the current situation with the formation and accumulation and processing of waste production and life due to the actual lack of reverse logistics services. The paper develops a comprehensive scheme-structure of existing problems of reverse logistics and offers specific recommendations for solving problems of reverse logistics management in Ukraine. Each aspect of improving the management system considered from the standpoint of economic, social, environmental, technical and technological efficiency. Particular attention paid to the relevant educational work with the population on ways to implement

the principles of reversible logistics, improving the culture of consumption together with the introduction of legal and social responsibility.

Keywords: supply chain management, reverse logistics, reverse flow, development aspects.

Володимир Марчук, Лідія Савченко, Олег Гармаш. "Управління реверсивною логістикою в ланцюзі постачань". В статті розглянуто питання управління зворотними потоками в ланцюгах постачань. В останній час ця проблема стала особливо гострою у зв'язку із зростанням економічних втрат та соціальних, економічних і безпекових загроз, різкого збільшення повернень невикористаної, некондиційної, відпрацюваної свій ресурс продукції, шкідливих та небезпечних відходів, матеріалів для вторинної переробки та регенерації. Ця ланка бізнес-процесів раніше навіть не виділялась в структурі ланцюга постачань.

На основі проведеного аналізу теорії і практики рециклінгу, ресурсозбереження, вторинної переробки та утилізації автори прийшли до висновку про необхідність формування замкнутого контуру ланцюга постачань за участю реверсивних потоків та на основі концепції життєвого циклу продукту.

На прикладі України проілюстровано сучасний стан з утворенням і накопиченням та переробкою відходів виробництва і життєдіяльності через фактичну відсутність служб реверсивної логістики. В роботі розроблено комплексну схему-структуру існуючих проблем реверсивної логістики і запропоновано конкретні рекомендації щодо напрямків вирішення проблем управління реверсивною логістикою в Україні. Кожен аспект удосконалення системи управління розглядається з позиції економічної, соціальної, екологічної, техніко-технологічної ефективності. Особливу увагу приділено відповідній просвітницькій роботі з населенням щодо шляхів реалізації принципів реверсивної логістики, підвищення культури споживання разом з впровадженням юридичної та соціальної відповідальності.

Ключові слова: управління ланцюгами поставок, реверсивна логістика, реверсивний потік, аспекти розвитку.

Владимир Марчук, Лидия Савченко, Олег Гармаш. "Управление реверсивной логистикой в цепи поставок". В статье рассмотрены вопросы управления обратными потоками в цепях поставок. В последнее время эта проблема стала особенно острой в связи с ростом экономических потерь и социальных, экономических и угроз безопасности, резкого увеличения возвратов неиспользованной, некондиционной, отработав свой ресурс продукции, вредных и опасных отходов, материалов для вторичной переработки и регенерации. Это звено бизнес-процессов раньше даже не выделялась в структуре цепи поставок.

На основе проведенного анализа теории и практики рециклинга, ресурсосбережения, вторичной переработки и утилизации авторы пришли к выводу о необходимости формирования замкнутого контура цепи поставок с участием реверсивных потоков и на основе концепции жизненного цикла продукта.

На примере Украины проиллюстрировано современное состояние с образованием и накоплением и переработкой отходов производства и жизнедеятельности из-за фактического отсутствия служб реверсивной логистики. В работе разработана комплексная схема-структура существующих проблем реверсивной логистики и предложены конкретные рекомендации по направлениям решения проблем управления реверсивной логистикой в Украине. Каждый аспект совершенствования системы управления рассматривается с позиции экономической, социальной, экологической, технико-технологической эффективности. Особое внимание уделено соответствующей просветительской работе с населением о путях реализации принципов реверсивной логистики, повышение культуры потребления вместе с внедрением юридической и социальной ответственности.

Ключевые слова: управление цепями поставок, реверсивная логистика, реверсивный поток, аспекты развития.

Introduction. At the present stage of economic development of Ukraine reverse logistics is considered as an important factor in the development of logistics companies and enterprises, industries and the state as a whole. The organization of reverse logistics processes in Ukraine today is poorly understood. This is due to the fact that most supply chains are focused only on the movement of material flows in the forward direction and do not take into account the possibility of their return in the opposite side. The processing of returned goods flows, as well as their recycling or disposal, involve a large number of problems and costs, which require knowledge and experience in the field of reverse logistics management, as well as an understanding of the relevant infrastructure.

Analysis of the latest research. The logistics approach to reverse material flow management means integration into the supply chain management system, in order to reduce costs and increase the economic efficiency and sustainability of logistics companies and enterprises.

It should be noted that the literature uses different terms: logistics of reverse flows, inverse logistics, recycling logistics, and so on. These concepts are almost similar in content and do not contradict each other, but only reflect the different views of the authors on the same problem - management of raw materials, products, work-in-progress material, packaging, finished products from consumer to manufacturer to return them to consumer properties or disposal [1].

Practical issues of application of BSCM (Back Supply Chain Management) technology are considered in [2]. It is shown that on the basis of reverse logistics must be: solved the problem of cost optimization in the field of recycling and waste disposal; implemented the resource saving and energy saving systems in production; created the after-sales support systems for goods (service and maintenance, modernization and repair); created and developed the inverted and closed supply chains, etc.

Problems of reverse logistics are widely disclosed and analyzed in the works of domestic and foreign scientists - B. Anikin, V. Dybska, Yu. Yegorov, O. Zueva, A. Kanke, I. Kosheva, N. Moiseeva, V. Sergeev, A. Sterligova, S. Uvarov, M. Hrygorak and others. The issues of development and implementation of programs for the development of ecological and economic systems of waste management on the basis of reverse logistics were considered by foreign scientists De Brito M.P., Geroliminis N., Merkis-Guranowska A. and Rosik-Dulewska C., I. Harris, M. Naim, C. Mumford, Murphy Paul R.

Research of organizational mechanisms of improvement of waste management systems was carried out by scientists I. Vakulenko, N. Korobchenko, V. Krylyuk, Yu. Shulaev, T. Shevchenko. In the works of T. Dovga, I. Sadovnichia and M. Samoilik the feasibility of introducing solid waste recycling on the basis of logistics is assessed. A significant part of the work [3] is devoted to reverse flows, in particular, the economic efficiency of recycling.

Reverse flow management, through the introduction of modern IT systems, can be an effective tool to reduce financial costs. Currently, organizations seek to reduce costs and increase return on investment through the introduction of ERP-systems, the effectiveness of which can be achieved in short time, taking into account their profitability and cost savings. Setting up an RMA system (Return Merchandise Authorization) related to the ERP system via the Internet and training its customers allows the company to implement a convenient and simple process of returning goods. This system contributes to the operational tracking of returns [4, 5].

In practice, Investment Recovery Management systems can help manufacturers and retailers with effective reverse logistics to determine what can be done with returned goods. There are many ways to solve this problem - repair and resale, donations to charity, destruction etc. [6, 7].

Thus, supply chain management in the system of reverse logistics is a relatively new field of research, but in foreign research has already achieved some progress. However, there is a problem of implementation of the foreign approaches to the Ukrainian conditions, designing of reverse flows logistic systems in unstable economic situation.

The goal of the work. The aim of the paper is to analyze the current state and role of reverse logistics in supply chain management, identify problems and

prospects for the development of reverse logistics in Ukraine.

Presentation of the main material of the study. The use of reverse logistics in Ukraine is becoming increasingly important with increasing sales, consumer awareness and safety of goods. According to [8], the most common reasons for the return of goods by consumers are hidden manufacturing defects, irreversibility of the product size, color, style to consumer requests, incompleteness (Fig. 1).

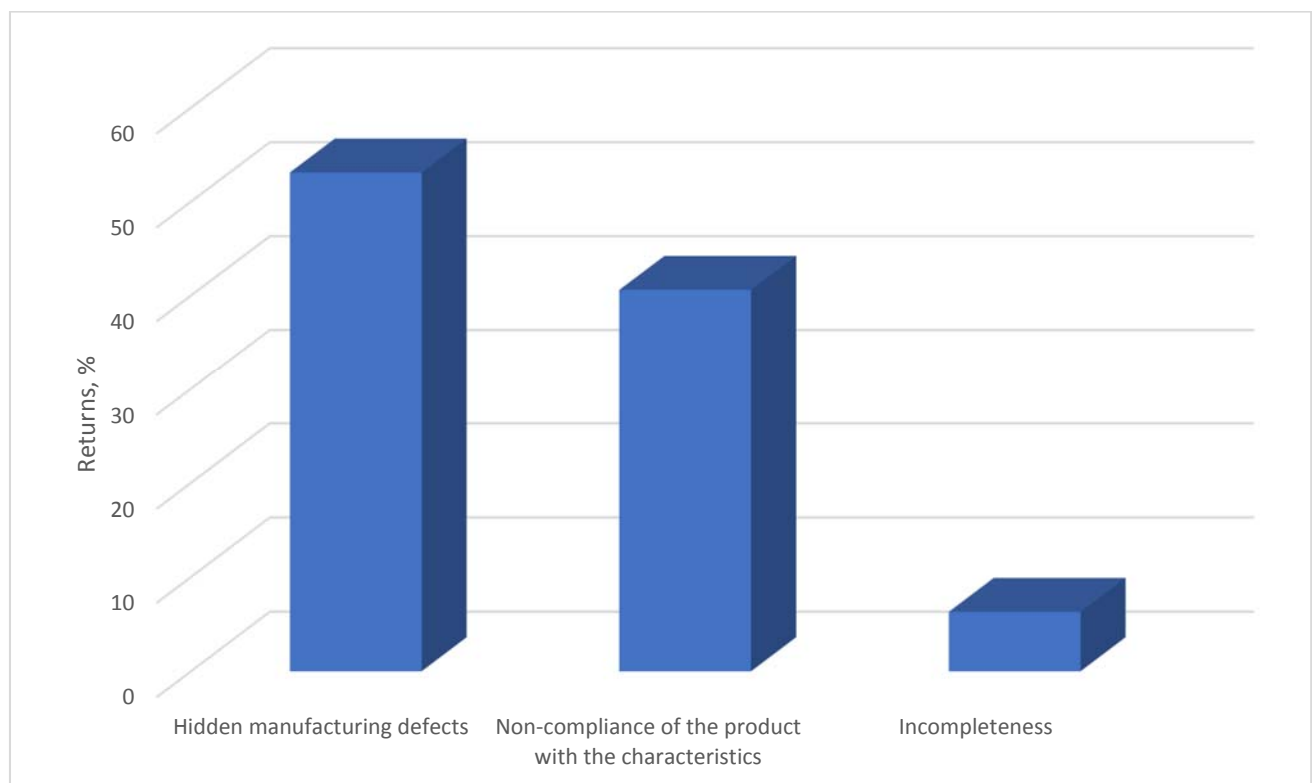


Figure 1 - Reasons for returning goods by consumers

Source: compiled by the authors

The application of the logistics principles allows a comprehensive approach to the implementation of key processes and tasks of reverse flow management, provides increased customer satisfaction, additional profits and support the product life cycle. To do this, it is necessary to consider the issue of reverse logistics as an integral part of a complex mechanism in a supply chain management system.

In Ukraine, there are significant problems in the development of reverse logistics (Fig.

2). The first problem is the underestimation of the importance of reverse logistics both in the state and in the policy of companies and enterprises. In order to assess the significance of the application of the principles of reverse logistics, we present some statistics on waste management in Ukraine. Ukraine is one of the countries with the highest absolute volumes of waste generation and accumulation. 700-720 million tons are generated annually. The total mass of waste accumulated on the territory of Ukraine in surface storage exceeds

25 billion tons, which is about 40 thousand tons per 1 km². Taking into account the current technological level of waste processing in Ukraine, among the total amount of waste generated annually, the valuable is 410-430 million tons. Only 1-2% of all industrial waste belongs to the category of highly toxic, but their impact on the environment is growing [9].

Underestimation of the importance of reverse logistics has led to the fact that there are no services that would deal with reverse logistics in companies and logistics chains. This can be explained by the fact that reverse logistics is considered not to add any value, bring some losses and lead to unnecessary financial pressure on participants in the logistics chain. In addition, return operations

require more careful inventory control, information management, cost accounting and disposal.

The next problem in the development of reverse logistics in Ukraine is the lack of opportunities to integrate reverse logistics into existing logistics chains. Luckily, the situation is changing. Reverse logistics is recognized by many companies as an integral part of the supply chains management and distribution of goods, which deserves the same attention as "direct" logistics. Indeed, both types of logistics are important for successful business, as they have the same goal - to find ways to do better, faster and cheaper, providing a high level of customer service (trade and wholesale intermediaries).

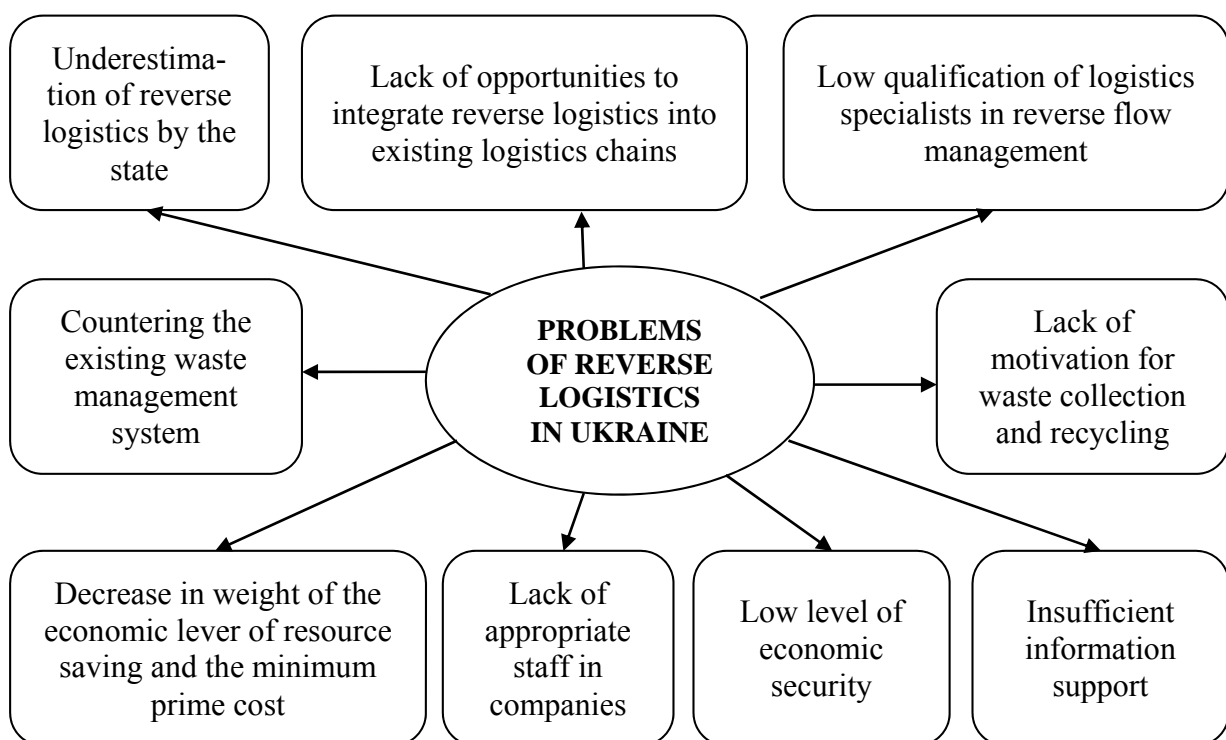


Figure 2 - Problems of reverse logistics development in Ukraine

Source: compiled by the authors

Low qualification of logistics specialists of different levels in the issues of reverse flow management and implementation of the principles of reverse logistics in the activities of companies is the next problem in Ukraine. Despite the significant progress in the

training of logistics specialists in the universities of the country, today there is a staff shortage for senior and especially middle-level specialists. This problem, in our opinion, is systemic in nature and is related to: the reluctance of the state and logistics

companies to invest in studying of relevant professionals; administrative barriers and a high level of corruption in the economy and many others.

Another serious problem in the development of reverse logistics is lack of information support, which is primarily related to the first problem - the underestimation of the reverse logistics importance, which is not a priority for companies and enterprises. Despite the fact that some companies have automated information systems related to reverse logistics, the resources of such systems are not enough to support reverse flows, due to the complexity of a large number of exceptional cases.

For the operational interaction of different companies in the logistics chain in the implementation of the principles of reversible logistics, it is necessary to create a modern flexible information system. To facilitate the work of companies and ensure the efficient organization of reverse logistics in supply chains, EDI (electronic data interchange) standards have been specially developed - a series of standards and conventions for the transmission of structured digital information between organizations, based on regulation of message formats. Typical sets of operations have been developed to effectively manage the flow of information related to reverse logistics. But management's neglect of reverse logistics has not led to an increase in the use of EDI standards in companies, despite lower costs for standards to increase their availability.

Ukrainian communities, especially rural ones, have limited opportunities to collect and safely dispose of garbage, which is due to low motivation of the population and unpreparedness of society as a whole. Collecting and further disposing of waste in rural areas is a difficult task, as transporting garbage from remote areas to recycling points is very expensive. As a result, toxic and dangerous landfills from years of illicit emissions continue to grow. Unofficial and

illegal landfills pose a significant threat to human health and the environment, degrade drinking water quality, pollute the atmosphere and have a devastating effect on sanitary and hygienic soil conditions.

Solving the problems of reversible logistics in Ukraine requires a comprehensive solution of economic, environmental, technological, social and regulatory aspects of development (Fig. 3).

The economic aspect is directly related to the cost of promoting reverse flows in the supply chain, which includes:

- the cost of processing reverse flows, which begins with the decision to return the goods for further restoration (processing) or return the money to the buyer at his request or replacement with a similar product;
- logistics costs associated with the movement of return flows from places of consumption to the place of processing (transport, loading and unloading and warehousing);
- processing costs (restoration of product quality indicators or its sale at reduced prices);
- costs of disposal of goods.

The main ways to reduce such costs are:

- introduction of innovative technologies of rational (effective) reverse logistics flows management;
- training of personnel involved in the reception of reverse flows, and improving their technical equipment;
- standardization of customer service processes when returning goods in order to meet their requirements;
- automation of logistics processes (transportation, warehousing, loading and unloading) during the organization and planning of reverse logistics;
- introduction of best practices in reverse processes management;
- outsourcing of reverse logistics processes.

The implementation of these areas will increase the efficiency of the use of available resources of companies and enterprises, reduce costs in the implementation of reverse logistics processes.

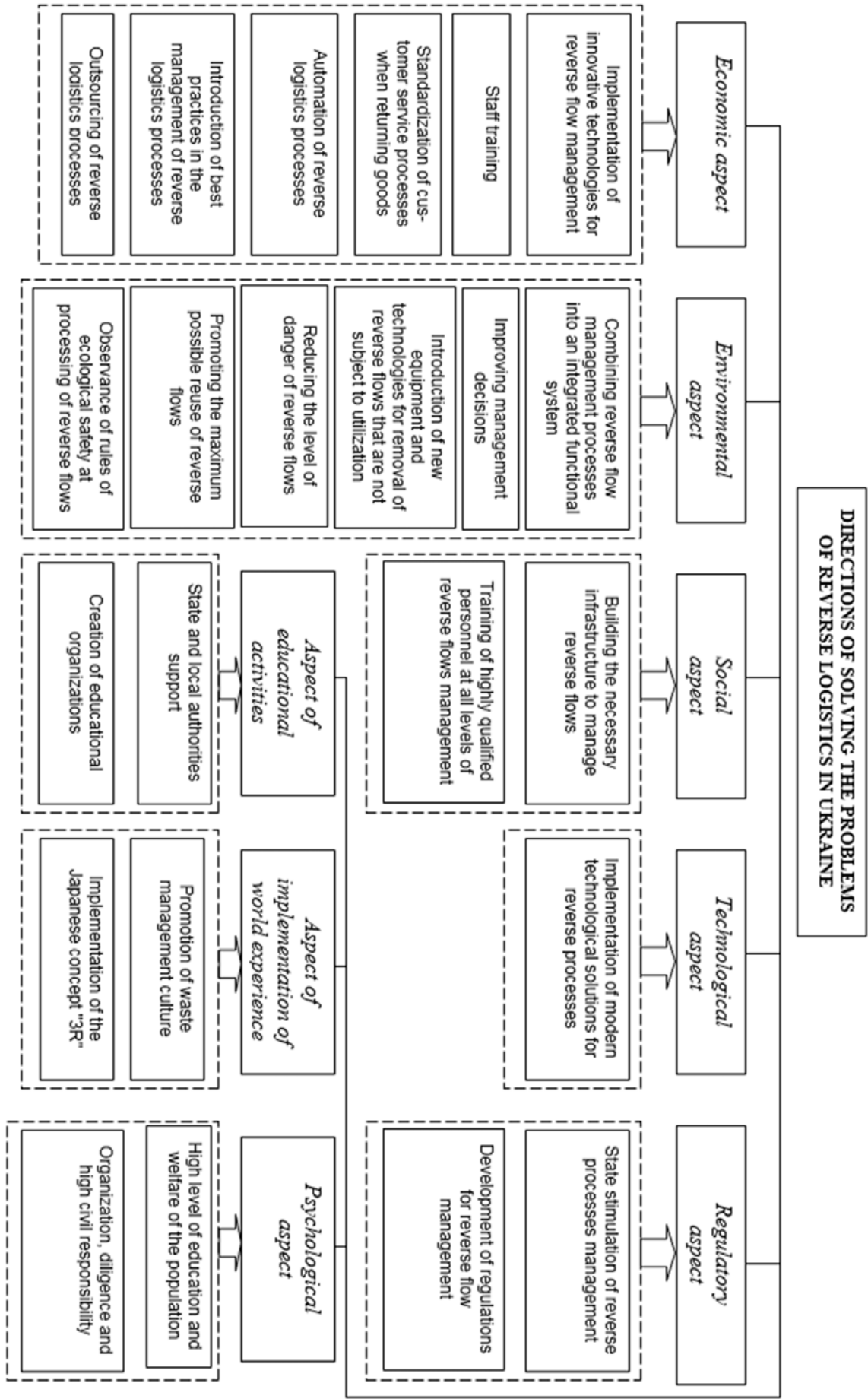


Figure 3 - Directions for improving reverse logistics in Ukraine

Source: Compiled by the authors

In addition to the economic aspect, logistics management of reverse flows in supply chains should implement the environmental aspect, aimed at reducing the negative impact on the environment [10].

The environmental aspect of the concept of reverse logistics and logistics in general should include the minimization of harmful emissions: emissions and wastewater, noise and vibration. This transformation of definitions has given rise to the concept of "environmental logistics", i.e. the design and management of logistics processes (transportation, warehousing, industrial relocation, disposal) in order to limit the negative impact on the environment. In the context of globalization of the world economy, the dynamic development of distribution networks, the transport sector is becoming the largest source of environmental pollution [11].

What is now called "green logistics" or "environmental logistics" is a combination of several areas of research that have begun at different times over the past 40 years. This concept includes the following five components: emission reductions from transport, urban logistics, reverse logistics, corporate environmental strategy focused on logistics and "green" supply chain management [1].

According to a study by PE International (UK), today the leaders and top managers of large companies recognize a number of significant economic benefits in the implementation of environmentally friendly logistics systems [12]. The results of the survey conducted by EyeforTransport (2007), Aberdeen Group (2008), Insight (2008), as the main factors in the implementation of environmental logistics systems, identified such as improving corporate image, competitiveness of the company, cost savings and compliance with government regulations [13].

The same direction of economic and environmental goals in the field of waste disposal is most fully observed, which is often

supplemented by product recycling. Therefore, the tasks of logistics in the field of reverse flow disposal should be considered the design and implementation of logistics chains from the place of their origin to the place of their disposal (storage, reuse, etc.). It is obvious that in these chains will perform the functions of accumulation, segregation (sorting), transportation, storage, transformation, reuse.

The main ways to reduce the negative impact of reverse logistics processes on the environment should be considered:

- integration of reverse flow management processes into a single, integrated functional system that promotes economical, safe implementation of reverse logistics tasks;
- improvement of management decisions that make it possible to increase the efficiency of nature management while preserving and improving the environment at the local, regional and global levels;
- introduction of new equipment and technologies, ecologically safe methods and means for removal of reverse flows which are not subject to utilization;
- promoting the maximum possible reuse of reverse flows;
- compliance with the rules of environmental safety in the processing of reverse flows;
- reducing the level of danger of reverse flows.

The social aspect of reverse logistics is that the introduction of its principles in production will create new jobs, train new highly qualified personnel. In addition to recycling or disposal, reverse flows can be used for social purposes - charity (for example, computers, electrical and similar equipment and components), which significantly expands the life cycle of such goods.

Thus, it is necessary to consider the main directions of development of the social aspect of reverse logistics:

- creation of the necessary infrastructure for reverse flow management;

- training of highly qualified personnel at all levels of management of reverse material flows;

- rational use of reverse flows, including for charity.

The technological aspect of reverse logistics is associated with the development of modern technological solutions for the management of reverse flows, which will allow to decrease pollution of territories, get economic benefits and relieve social tensions. Це стане практичною реалізацією засад реверсивної логістики у межах замкненого логістичного ланцюга певного рівня.

This will be a practical implementation of the principles of reverse logistics within a closed logistics chain of a certain level.

The strategy of reverse logistics development in Ukraine is impossible without taking into account the legal aspect aimed at state stimulation of reverse flow management processes, which can not only optimize the use of natural resources, improve the environmental situation, but also improve the country's image internationally.

The treatment of reverse material flows in Ukraine is regulated by a number of regulations, including more than ten laws, hundreds of regulations at the level of the Cabinet of Ministers and regulatory documents of other agencies. The main legal act is the Law of Ukraine "On Waste". It provides a basic level of legal regulation of waste management and defines the legal, organizational and economic framework for activities related to the prevention or reduction of waste generation, collection, transportation, storage, treatment, disposal, and prevention of the negative impact of waste on the environment and human health on the territory of Ukraine. The law is constantly being improved, in particular, the last changes were made in 2010 (Law of Ukraine 1825-UI of January 21, 2010).

An important aspect of solving the problems of reverse logistics in Ukraine is the introduction of best practices of developed countries. Thus, in Japan, the problem of waste disposal is probably especially relevant

because there is no place for their disposal. To solve this problem with state support, the concept of "3R" proposed in April 2005 is widely promoted and implemented. It comes from three English words: reduce, reuse, recycle, which means reducing the amount of waste generated, reusing them and recycling as raw materials. These requirements at the present stage must meet the entire life cycle of products and services - including the stages of design, extraction of raw materials, transportation, production, use, dismantling of equipment, reuse of the product and its destruction.

The success of the 3R initiative largely depends on the right combination of public policies and programs adopted at the local level, which will solve the most difficult problems. It is no exaggeration to say that the proper disposal of waste has become a way of life for the Japanese. Also a huge role is played by geographical specifics (small area and lack of resources) and features of historical and cultural development of Japan, which explain the inherent dislike of its inhabitants to waste and, most importantly, a caring attitude to nature.

New trends in waste disposal in Japan in 2020 - the intention to completely eliminate the incineration and disposal of waste, moving solely to recycling.

The aspect of educational activities with the population in Ukraine is at an early stage, compared to developed countries. In addition to state support, real decisions of local authorities (communities) are necessary to change the mentality of the population in relation to waste management. An example of public education activities is the adoption by the municipality of Kamikatsu of a declaration of zero waste. To do this, they created a non-profit organization "Academy of Zero Waste". The mayor proposed to strengthen the law, which makes producers responsible for collecting their obsolete products, namely, to introduce a ban on the production and sale of goods that cannot be recycled. He also lectures in other cities in Japan, promoting the concept of zero waste.

The population of Ukraine should make a significant contribution to the fight against environmental pollution, and this is due to the psychological aspect. Only a high level of education and well-being of Ukrainians, organization, diligence and high civic responsibility - the key to success in solving the problems of reverse logistics.

Management of reverse flows should be considered as an integrated activity in the implementation of management functions. Active tactical and strategic planning should be carried out to optimize reverse flows, in particular organization, motivation, control and regulation of the process of flow of returns, industrial waste, waste products, containers, packaging, etc. from places of origin to application or storage.

Enterprises and companies need to constantly carry out a thorough analysis of the actual state of reverse flow management throughout their cycle, which will allow them to gain a number of competitive advantages, namely:

- reverse logistics can be valuable in increasing the product life cycle, the complexity of the supply chain, in the practice of use and consumer preferences, aimed at improving the quality of products and increasing productivity by reengineering business processes;
- service of returned products increases the degree of customer satisfaction;
- reduction of emissions of harmful substances into the environment;
- increase profits through re-sales of returned products;
- improve the reputation among customers through the development of the social aspect of reverse logistics;

- reduce operating costs and the probability of returns due to repair and improvement of products, understanding the real reasons for return;

- reduce transportation costs, after-sales service and repairs, administrative costs;

- optimize warehousing activities, improving the quality of goods and at the same time turning the returned goods into stock, going for processing and resale, etc.

Conclusions. Thus, the importance of reverse logistics in the supply chains management, in the activities of enterprises and companies and in Ukraine in general is becoming increasingly important. This is primarily due to the fact that reverse logistics is associated with obtaining competitive advantages, but to illustrate the benefits of it is quite difficult in the absence of a single view of the nature and tools of reverse logistics. Reverse logistics today is the strategically important part of business processes. Efficient maintenance of reverse flows can give companies a competitive advantage, but cannot be the basis of competition.

On the other hand, it is connected with the state support of reverse logistics processes, change in policy of companies and enterprises towards realization of principles of reverse logistics and introduction of their social and legal responsibility, increasing of culture of consumption, actualization of problems of environmental protection, etc. In addition, in today's environment, most supply chain management systems are not adapted to organization of reverse flows management, and, therefore, the problem of logistics management of reverse flows remains relevant.

References

1. Marchuk, V.Ye. Reversyivna lohistyka ta retsyklinh naukomistkoi produktsii : naukovo-metodychne vydannia / V.Ye. Marchuk, M.Yu. Hryhorak. – K.: Lohos, 2013. - 132 s.
2. Hryhorak, M.Yu. Teoretychni zasady reversyvnoi lohistyky / M.Yu. Hryhorak, Yu.M. Chychkan-Khlopovka // http://ena.lp.edu.ua/bitstream/ntb/34196/1/7_36-42.pdf

3. Hrytsenko S.I., Savchenko L.V. Ekolohistyka. Navch. posibnyk. Kyiv: NAU, 2021. 230s.
4. Lee N., Sumner W. The Six Hidden Costs of Reverse Logistics // Reverse Logistics Magazine. 2006. Fall,
5. Rupnow P. Increase Profits using the Reverse Logistics Cost Equation // Reverse Logistics Magazine. 2006. Spring/Summer.
6. Walsh J. Reverse Logistics and the Total Product Life Cycle // Reverse Logistics Magazine. 2007. Nov./Dec.,
7. Hryhorak M.Yu., Savchenko L.V. Kontseptualni osnovy rozvytku reversyvnoi lohistyky v tsyrkuliarnii ekonomitsi. Pryazovskyi ekonomichnyi visnyk. 2018b, №5 (10). http://pev.kpu.zp.ua/journals/2018/5_10_uk/15.pdf
8. Zueva O. N. Reversyvnaia lohistyka v upravlenii zapasami // Yzvestiya BHU. 2009. №1. URL: <https://cyberleninka.ru/article/n/reversivnaya-logistika-v-upravlenii-zapasami> (data obrashchenia: 14.07.2021).
9. Green logistics. Improving the environmental sustainability of logistics / Alan McKinnon, Sharon Cullinane, Michael Browne and Anthony Whiteing, the Chartered Institute of Logistics and Transport, London, 2010, 372 p.
10. Hryhorak M.Yu., Varenko Yu.V. Pryntsypy «zelenoi lohistyky» v diialnosti lohystycheskykh provaidirov. Matematycheskoe modelyrovanye, optymizatsiya y ynformatsionnye tekhnolohy: 4 mezhdun. nauchn.konf., 25-28.03.14, mat-konf. - Kyshynev, 2014. - T.2. - S. 139-146.
11. Savchenko L.V. Enerhoefektyvnist ta ekolohizatsiia lohistychnoi diialnosti. Enerhoefektyvnist ta enerhozberezhennia: ekonomichnyi, tekhniko-tekhnolohichnyi ta ekolohichnyi aspekty : kolektyvna monohrafiia / Kol. avtoriv; za zah. red. P. M. Makarenka, O. V. Kalinichenka, V. I. Aranchii. Poltava : Astraia, 2019. S. 510-515
12. Kartava, O.F. Vprovadzhennia metodiv ekolohichnoi lohistyky v rehionalnykh prohramakh povodzhennia z vidkhodamy / O.F. Kartava, A.H. Kartavyi, V.O. Khrutba // Mizhvuzivskyi zbirnyk "NAUKOVI NOTATKY". — Luts'k. — 2014. — Vyp. №45. — S. 240–244.
13. Problemy vidkhodiv v Ukraini http://pidruchniki.com/18060203/ekologiya/problemi_vidkhodiv_ukrayini.
14. Marchuk V.Ye., Harmash O.M., Ovdienko O.V (2020) "World Trends in Warehouse Logistics". Intellectualization of logistics and Supply Chain Management. [Online], vol.2, pp.32-50, available at: <https://smart-scm.org/en/journal-2-2020/marchuk-volodymyr-harmash-oleh-ovdienko-oksana-world-trends-in-warehouse-logistics/> (Accessed 28 July 2020). DOI: <https://doi.org/10.46783/smart-scm/2020-2-3>