
Reverse Logistics in Polish Commercial Companies from Economic and Management Perspective

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Monika Wodnicka¹, Dagmara Skurpel²

Abstract:

Purpose: The aim of the article is to present the essence of reverse logistics from the perspective of theoretical concepts and determinants implying its development. The subject of reverse logistics in terms of product flows will also be discussed.

Design/Methodology/Approach: The article is based on the analysis of the literature, the results of secondary research and own research carried out in 2017, 2019 and 2021 among online stores in Poland.

Findings: The issue of reverse logistics is becoming increasingly important as the development of e-commerce and Industry 4.0 progresses, as well as in the times of the coronavirus pandemic, when consumers massively use the possibility of online shopping. It should be emphasized that returns and complaints are an inherent element of e-commerce business, and also constitute a competitive advantage factor. This research shows that the level of returns recorded by Polish company in the analyzed period is stable, and the factors determining it are the same as those defined globally. Therefore, a question arises about the further development of this area in Poland its determinants in the future.

Practical Implications: Reverse logistics of B2C is a big challenge for companies, which is subject to adaptation to their internal and external environment. Assuming that the dynamics of the trade growth as well as e-commerce will continue, it is necessary to observe the emerging trends. This is desirable from the point of view of businesses and customers.

Originality/Value: The article and the research carried out refers to an important topic, which is reverse logistics. It was presented with the example of Polish trading companies. It focuses on the aspects that create the atmosphere for this phenomenon. At the same time, attention was drawn to the global dynamics of the reverse logistics market, which is determined by the development of the e-commerce industry, government regulations of individual countries, as well as restrictions related to the Covid-19 pandemic.

Keywords: Reverse logistics, e-commerce, global reverse logistics market, product flows.

JEL codes: D12, F14, L81, M21.

Paper type: Research article.

¹University of Lodz, Faculty of Economics & Sociology, Department of Logistics & Innovations, ORCID ID: 0000-0002-9656-5713, E-mail: monika.wodnicka@uni.lodz.pl

²The same as in 1, ORCID ID: 0000-0002-9631-0147, E-mail: dagmara.skurpel@uni.lodz.pl

1. Introduction

The constant development of new technologies, globalization, and virtualization are just some of the factors influencing changes in the economy. One of the elements that directly affects logistics is the dynamic expansion of e-commerce, additionally exacerbated by the outbreak of the pandemic. Currently, the client is aware of his decisions and possibilities, his requirements are constantly growing, hence the need to develop a new sales strategy such as omnichannel (Cassidy, 2019). Omnichannel selling is becoming more and more popular, and although product returns apply to all industries and sales channels, e-commerce shows their greatest impact on sales and distribution processes. Their number is constantly growing, and the work related to their re-implementation into the sales cycle is quite complicated and requires defined actions.

The aim of the article is to present the reverse logistics process in e-commerce in the B2C segment. They are in the study secondary data used, but most of all information collected during own research conducted in 2017, 2019 and 2021 on a group of 121,139 and 141 companies from the e-commerce industry, respectively. The survey was carried out using CAWI (Computer-Assisted Web Interview) surveys on an internet panel. The global dynamics the reverse logistics market is determined by the development of the e-commerce industry, government regulations of individual countries as well as the restrictions related to the Covid-19 pandemic.

2. Theoretical Concepts Explaining the Reverse Logistics Phenomenon

Currently, reverse logistics is an important research area, both in theoretical and empirical terms, and therefore enjoys a growing interest of the world science and business. Customer requirements, social responsibility of businesses and legal regulations are the determinants of this interest growth. Among which the most important are economic aspects, creating value for the client, management optimization, as well as environmental aspects.

As for the term, reverse logistics appeared in the 1970s, but the discussion on this phenomenon was launched in the 1990s (Adlmaier and Sellitto, 2007). In the specialist literature, some terms are used interchangeably and refer to the same issues, then, they are used synonyms. Thus, there are no clear definitions of the processes taking place within reverse logistics.

Table 1. The concept of reverse logistics

Terms used interchangeably	Terms used as synonyms
- reverse distribution, - return logistics - reversed logistic - retro logistics	- recycling, - waste logistics - recovery logistics

Source: Own study.

The literature on the subject defines reverse logistics in a wider or narrower view, which depends on the types of reverse or the supply chain and its flow (Rogers *et al.*, 2006; Vitasek, 2013). In the literature on the subject, chain management is defined as the process of planning, implementing and controlling the efficient and economically effective flow of raw materials, materials, finished products and relevant information (Durach and Wiengarten, 2019), from the point of origin to the point of consumption, in order to meet customer requirements. Reverse logistics involves product flows in the opposite direction to traditional supply chain flows. Reverse logistics is an element of returns supply chains relate to (Ilgin and Gupta, 2013):

- collecting products from the market and selling them;
- processing of products in order to recover their market value;
- utilization.

So it will be about reverse flows of products, funds and information. The returns management process, in addition to reverse logistics, includes: returns, avoidance activities, and activities for controlling reasons for returns and reducing the number of returned products (gatekeeping). Reverse logistics in this approach is limited to the flow of goods or materials back in the supply chain, but it does not cover all activities related to the management of the reverse flows of goods and information.

One definition is that reverse logistics is a process of withdrawing products from their final destination in order to restore their value or dispose them properly (Rogers, Tibben-Lembke, 2002). Reverse logistics is defined as “ the movement of goods from a consumer towards a producer in a channel of distribution (Murphy *et al.*, 1995). Taking into account the specificity of handling returns in e-commerce, the reverse logistics is defined with regard to the type and purpose of returns. From the point of view of product management, reverse logistics areas are considered (Table 2).

Table 2. Reverse logistics areas of product management and reverse logistics market by return type

The area of sales process and products use	Area of after-use	Reverse logistics market by return type
<ul style="list-style-type: none"> - Returns of stocks and products surplus from advertising companies, - Product under warranty returns, - Returns of complaint products due to defects and faults, - Returns of brand new products unwanted by customers 	<ul style="list-style-type: none"> - Return of worn out products, - Return of obsolete products, - Return of physically and economically worn out products 	<ul style="list-style-type: none"> - Recalls - Commercial Returns - Repairable Returns - End-of-use Returns - End-of-life Returns

Source: Own study.

In a wider sense, reverse logistics means reducing the amount of materials through actions in the opposite direction of the supply chain flow. To make better use of recovery and recycling as well as to reduce the total amount of worn out materials (Carter and Ellram, 1998). Szołtysek equates reverse with the concept of temporary waste, and understands them as „material goods which are useless to the user due to some defect or damage, in respect of which the user wishes to continue using them after repair” (Szołtysek, 2009; Szołtysek and Twaróg, 2017).

Elaborating the definitions of reverse logistics has also been undertaken by business-related organizations. The Reverse Logistics Association defines this term as any after-sales activities related to a product or service aimed at optimizing and/or increasing the efficiency of all after-sales activities, contributing to savings in financial and natural resources (Reverse Logistics Association, 2012).

Taking into account who is the initiator of returns, we will divide them into B2B (when the wholesaler returns the goods to the manufacturer) and B2C (when the customer returns the goods, e.g., to the store or the manufacturer). This study focuses on B2C reverse logistics, when the customer may return complete or defective goods (Starosta-Patyk, 2016).

3. Development of the Reverse Logistics Market

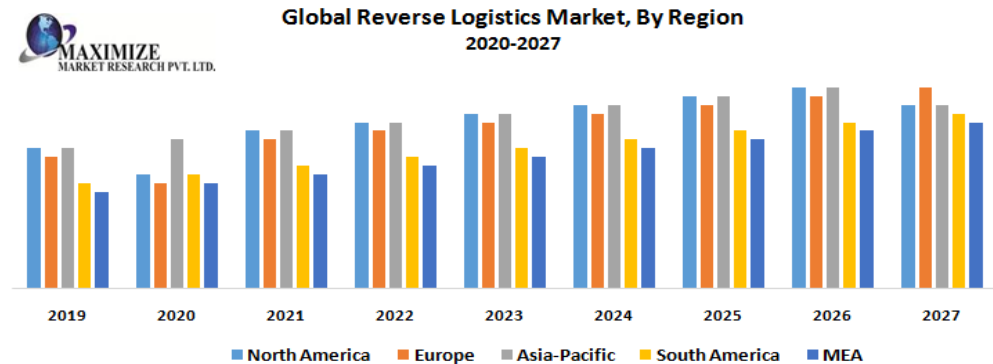
The issue of reverse logistics is becoming increasingly important as the development of e-commerce and Industry 4.0 progresses, as well as in the times of the Coronavirus pandemic, when consumers use possibility of online shopping en masse. It should be emphasized that returns and complaints are an inherent element of e-commerce business, and also constitute a competitive advantage factor. Reverse logistics affects both financial results and relations with customers.

Analyses available on the market show that product returns can account for up to 50% of shipments, and costs up to 5% of total income. These data are not surprising when you look at the shopping market. According to Statista, by 2026 the global volume of parcel shipments sent will increase to 262 billion, i.e., twice as much compared to 2019, when the market was around 103 billion parcels (Statista, 2021). In Poland, the market of courier, express and parcels is also developing rapidly. Forecasts say that in 2023 the operators of this market will handle almost 850 million parcels, and the market value will reach nearly PLN 12 billion („Rynek KEP w Polsce w obliczu trendów i nowych wyzwań”).

According to Allied Market Research (2019), the forecasted average annual growth of the global reverse logistics market in 2018-2025 will amount to 4.6%. In 2017, this market was valued at USD 415.2 billion, while by 2025 its value may reach the level of USD 603.9 billion. The analysis of individual regions indicates the Asia-Pacific region, which will dominate the global reverse logistics market in the coming years (Figure 1). Its large share in the discussed market is the result of reversed

supply chains of spare parts and products of the manufacturing industry from China, India, Taiwan and South Korea. North America and Europe take the second place (Maximize Market Research, 2020). According to IHL (2020), the cost of return deliveries in the EMEA region in 2015-2019 increased from USD 234 billion to USD 388 billion.

Figure 1. Global reverse logistics market by region (state and future forecasts)



Source: Maximize Market Research, 2020.

The development of the reverse logistics market is inevitable thanks to the prevailing trends and services offered by sellers, such as: „buy now, pay later” or „try before you buy” (Balfour, 2019). In Poland, there is one more phenomenon which is the result of the new regulations, namely single-person companies can return goods purchased online and use returns and complaints policy on the same terms as other customers. Until recently, only a natural person could have returned goods purchased online without giving any reasons. Currently, there are about 3 million of new type buyers on the Polish market, i.e., entrepreneurs with consumer rights (www1). As the Gemius report (2020) “E-commerce w Polsce 2020, shows, 52% of online shoppers in Poland³ indicate that the factor encouraging to online shopping is the possibility of free returning of the product by courier (door to door), and 26% are more likely to shop in a store that clearly and legibly informs about the possibilities of return and complaint.

The research results clearly show that having the possibility of a free, simple and convenient return, consumers would buy more and more often. The examples show that the resulting increase in sales over the long term covers the increase in return costs. The return may also help in gaining a competitive advantage, consumer satisfaction, and, consequently, also building his loyalty (Bower *et al.*, 2012).

³The analysis of the annual Gemius reports on the e-commerce market in Poland clearly shows that e-commerce has been very well received in our society and has a bright future ahead. Purchase statistics compared year on year (56% of internet users in 2018, 62% in 2019, and 73% in 2020).

Tony Hsieh, the co-founder of the first online store selling footwear, and later also clothing, found it out. Opening Zappos.com in 1999, it introduced free shipping and returns. The consumer could order several models of shoes in different colors, try them on at home, leave the ones they liked and return the ones that do not fit within 60 days. After that, the payback period was extended to 365 days. When analyzing the sales data of Zappos.com, it was found that the most profitable customers are those who use the free returns policy the most, because they actually buy the most (Hoyt, 2011). The returns policy was similarly developed by the French footwear retailer Sarenza (on the market since 2005) and the German online footwear and clothing seller Zalando (on the market since 2008), who allow customers to return free of charge within 100 days.

Our domestic footwear e-stores, such as butsklep.pl, following the example of foreign competitors, also offer the option of returning goods within 100 days.

4. Reverse Logistics of Polish Commercial Enterprises in Terms of Product Flows

Possibility to return goods purchased online, in Poland, they are regulated by legal provisions that directly affect enterprises and extend their obligations to the need to accept the returned goods. The possibility of returning goods is more and more often offered by traditional retail chains. There are many reasons for returns: from the willingness to check a given product after the discrepancy between the actual state and that presented by the seller. Moreover, the level of returns in supply chains is influenced by: sales forecasting, new product design, sales promotion, purchasing policy, production, customer return policy M. Bernon, J. Cullen, J. Gorst, Reverse logistics self assessment workbook, Department for Transport, Cranfield University, University of Sheffield, Sheffield 2008 (Bernon *et al.*, 2011). Only thanks to a well-developed sales plan, product quality and customer service, we are able to minimize the costs associated with return logistics. Returns are very important in the next stages of the purchase process the product on the Internet:

- before the transaction (return policy available on company websites helps build its credibility),
- when concluding it (the possibility of return reduces the risk and thus encourages you to complete the purchase),
- after the transaction (efficiently organized free return helps build satisfaction customer).

This is confirmed by the UPS Pulse of the Online Shopper research, which shows that 90% of consumers check the return policy in e-shops, of which 67% do so before purchasing a product or service. At the checkout stage, 88% admit to abandoning the shopping cart, but 82% say they would make a purchase if they could return the product to a brick-and-mortar store or send it back to the seller using a prepaid return label. The same research shows that more than half of

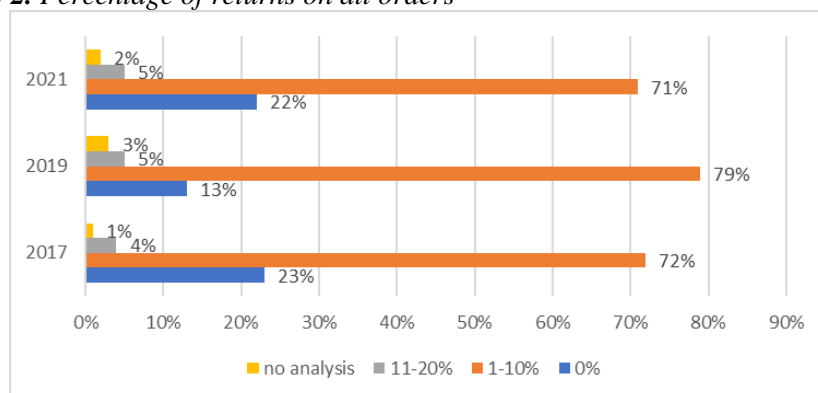
Europeans once returned a product they bought online. The most frequently returned products were Germany (72%), the least frequently Italians (36%) (UPS, 2015). The most popular returns are clothing and footwear (28%), i.e., products that are currently the most frequently purchased category on the Internet. Books return by far the least (3%).

Wanting to offer consumers the highest possible value in the area of returns, UPS asked them what the return process should look like to build the best e-commerce experience. The respondents indicated that, above all, the return should be free of charge, no questions asked, with an automatic refund. The respondents of the research commissioned by MetaPack responded similarly, for which the necessity to pay for the return (58%), the complicated return process (51%) and the inconvenience during the delivery of the package (46%) were the factors determining the negative receipt of the return (MetaPack, 2015).

The return is a complex process, because it is not only collection of the goods from the consumer and handing them over to sellers, but also a number of related activities incl. with the preparation of documents, shipping insurance, refunds, handling of warehouse processes. Efficient and effective organization of the various stages of return requires infrastructure, IT systems, process design and building competences among employees.

Own research shows that the level of returns recorded by Polish enterprises is stable. 7 out of 10 respondents declare that returns constitute up to 10% of all completed orders. Only every fifth respondent indicates that the level of returns oscillates around 11-10 percent (Figure 2).

Figure 2. Percentage of returns on all orders



Source: Own research.

When joining the returns organization, e-entrepreneurs basically have two options. They can do it themselves or outsource the entire process or its individual stages to external companies. When you decide to create your own system returns, e-

companies should remember that you need to prepare the infrastructure along with the IT system, design processes, hire employees and build competences in the area of reverse logistics. It is associated with large investment expenditures, but own research shows that since 2017, over 95% of Polish enterprises have been handling returns on their own (Figure 3).

Figure 3. The form of handling returns in Polish online stores



Source: Own research.

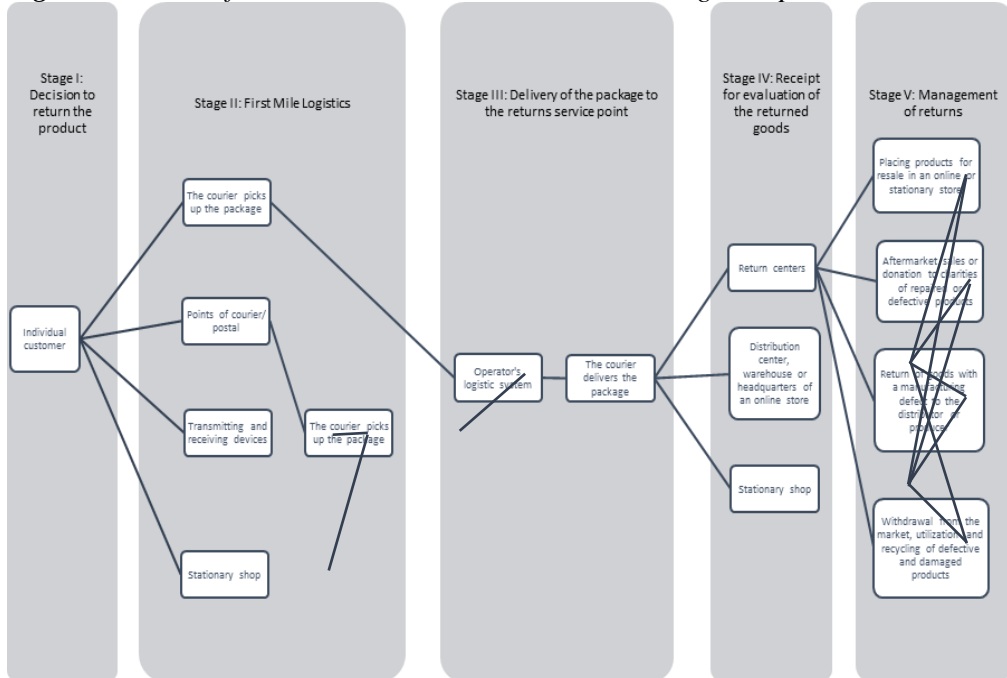
Based on our own research, there are three main and basically the only reasons why customers decide to return the goods: damage to the goods in transport (42% in 2021), sending the wrong goods (44% in 2021) and breakdown (failure) of goods during use (14% in 2021). There are several basic stages in the B2C e-commerce reverse logistics process (Figure 4). The process is complex and includes a number of activities related to the collection of products from consumers, organization of transport, handling of agazin processes, including quality control of returned goods and their re-sale or recycling, as well as the preparation of documents and information flow.

Depending on the type of company - operating only on the Internet (pure player) or having a network of traditional outlets (brick and click) in addition to an e-shop - different channels and return options are available. According to the 3C rule (convenience, choice, channel), defining the needs of customers in online commerce, the key factors in ensuring an appropriate return policy are: convenience in returning goods, flexibility of the system and the choice of several options for returning goods. Equally important for e-customers are free returns. Some companies have made free returns an element of their business strategy and an asset that distinguishes them on the market.

Polish online stores most often offer customers the possibility to choose from several return channels (Figure 5). In recent years, Polish postal services have been losing popularity in favor of courier companies, sending and receiving devices (in Poland, so-called parcel lockers) and the possibility of returning goods in a stationary store. An issue still neglected by entrepreneurs is the costs associated with returns. In 2019, only 21% of the surveyed entities declared that they cover the cost of shipping

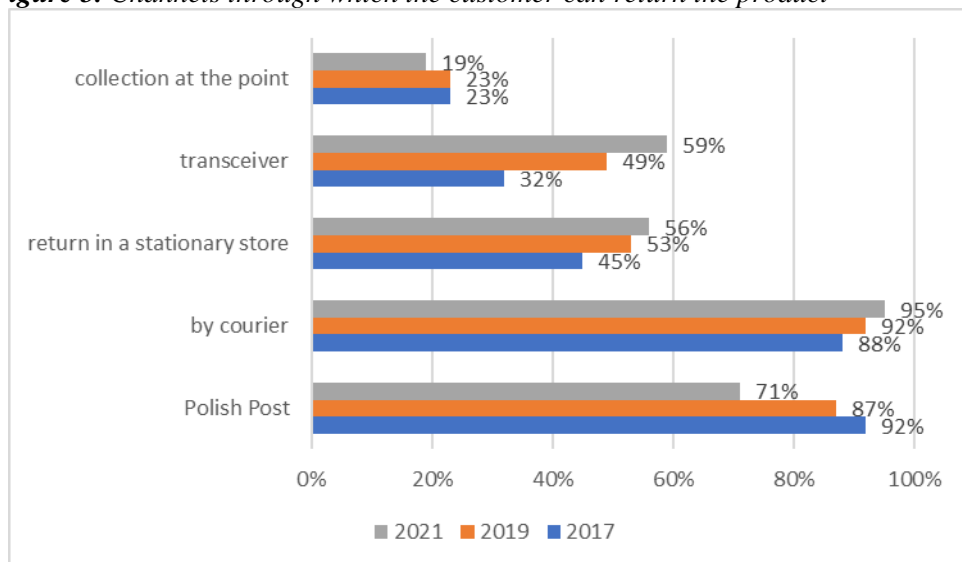
the returned goods, in 2021 it was 23%. This means that in 7 out of 10 stores, the customer bears the cost of returning the products to the online store.

Figure 4. Product flows in the B2C e-commerce reverse logistics proces



Source: Own study based on Pluta-Zaremba, Cichosz, 2016.

Figure 5. Channels through which the customer can return the product



Source: Own research.

In the process of reverse logistics in B2C e-commerce it is important to determine the cause of the return at the earliest possible stage and make the return route of the products dependent on it. This allows you to shorten the process time and reduce logistic costs (including inventory and transport costs). For efficient process management, shipment visibility is essential thanks to the real-time flow of information between e-retailers, logistics companies and consumers. It is possible thanks to the development of applications and IT technologies by logistic operators and courier companies as well as the integration of IT systems of business partners.

5. Conclusion

Returns, although very important, are still neglected by Polish online stores. The research results clearly show that having the possibility of a free, simple and convenient return, consumers buy more and more often. The return then acts as a sales lever, causes consumer satisfaction and, consequently, also builds his loyalty. Organization of an efficient and effective process Reverse logistics in B2C e-commerce is big challenge. Consumers buying products online expect e-stores to have a friendly return policy and procedures ensuring convenience and flexibility and choosing from several return options. It is worth for online stores to take up this challenge, because an efficient process does not only contribute to individual customer satisfaction and growth sales, but most of all it allows reducing the costs of logistic handling of returned goods.

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