



## E-COMMERCE INFLUENCE ON CHANGES IN LOGISTICS PROCESSES

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**ABSTRACT. Background:** The aim of this publication is to address the changes in retail trade, which have a direct influence on the development of e-commerce which in turn causes modifications to logistics chain management strategies and methods of flow control.

**Materials:** The article has been written on the basis of an analysis of subject literature together with determining the influence of e-commerce to changes in logistics processes. The publications included in this study have been selected in order to present the subject of e-commerce development as well as evaluate changes in methods of flow control. The analysis has been prepared based on the author's experience and available reports and publications.

**Results:** As a result of the conducted analysis, an assessment of the proficiency level of the changes in logistics processes on the local and international market as well as of the trends for these changes has been made.

**Conclusions:** With the development of e-commerce, a new logistics chain management strategy began to appear, which covered both the process of handling the online and offline sales channel. Therefore, it can be concluded that properly adapted flow control methods will be the means for achieving the goal. Tasks will include: streamlining flow processes, improving the efficiency of logistic processes as well as adjusting them to market requirements.

**Key words:** e-commerce, online sales, logistics.

### INTRODUCTION

Online shopping is becoming more and more popular especially in Europe, the Americas and Asia. Although the share of such purchases in the whole of commerce is still marginal, we are observing both diversified and constantly high dynamics of this sector.

E-commerce sales of goods and services grew by 16.3% to 363.1 billion euros in 2013, according to the latest statistics. This amount includes sales in the European Union, which equaled to 318.1 billion euros, representing 87.6% of the Old Continent's total turnover and represents an increase year-on-year by 15%. This data was included in a report prepared by the E-commerce Europe association [Harrington 2014].

E-commerce is becoming more and more demanding in terms of innovative business models and consumer expectations. The logistics needs of this market are diverse due to the increasing variety of products (e.g. books, clothing, household appliances, building materials) of different value, weight and size. Customers increasingly expect to receive information in real time and value simplified and free returns of goods as well as flexible delivery options [Kawa 2014].

### E-COMMERCE IN POLAND AND WORLDWIDE

*E-commerce - Poland set against Europe*

According to the "eCommerce Poland 2013" report, Polish e-commerce is one of the

fastest growing in Europe. The growth rate is 20-25% per year [Jarosz 2013]. Similar results were published by Ecommerce Europe, stating that the Polish e-commerce market increased by 24% in Poland compared to 2012.

E-commerce in Poland is growing fastest among Central European countries - results were published in a report by Central Europe B2C Ecommerce [Zarzycka 2014].

In 2013, its value amounted to approx. 25 billion PLN. According to estimates, in two years it is to reach approx. 40 billion PLN. The share of e-commerce in the total trade in Poland is approx. 4%, however, this is much less than in developed countries, such as the United Kingdom, Germany, or Norway.

Over 30% of Poles declare that they shop online. This is more than in Spain and Italy. Poles choose online shopping mainly due to the following:

- lower price (71%),
- home delivery (70%),
- convenience (61%),
- and saving time (50%).

However, according to TNS Poland data:

- 43% shop several times a year,
- 25% several times a month,
- 19% once a month,
- 8% once a year or less,
- 4% at least once a week,
- 1% cannot define.

Delivering a package to the customer is one of the key processes in e-commerce. Interestingly enough, according to studies conducted by the ARC Rynek i Opinia Research Institute at the request of Poczta Polska (the Polish Post) the price of the transport service is not a priority criterion (34% of respondents). What is more important is punctuality (41%), but also no damages (22%) or losses (20%). Moreover, research shows that a guaranteed delivery date is much more important to customers - 65% of respondents than a mere declaration - 25%. Only 10% of respondents prefer dedicated forms such as delivery on a specified day and time. However, e-commerce clients do not want to wait for the purchased product more

than 3 days. A confirmation of delivery (19%), package tracking (17%), shipping insurance (15%) and confirmation of delivery (14%) are also essential [Kawa 2014].

The e-commerce market in Central Europe is growing faster than the one in the US. In 2013, it grew by 19% and reached 75.9 billion euros. According to forecasts, the market will grow by 23% compared to 2013 and reach 93.3 billion euros. In terms of growth dynamics, Poland is the leader of the region. The value of the domestic market increased by 24%. However, this did not affect average online expenses, Poles spent an average of 422 euros online last year, while the European average was 1402 euros, whereas the average in Central Europe - 2617 euros.

Germany is definitely the largest market in the region. Here, e-commerce turnover amounts to 65.7% of the entire Central European market. Internet availability in Germany is very high - 85%, and the German web user population is 69.9 million. As the younger generation of Germans, open to new trends, enters into adult life familiarized with the Internet, their market is moving away from traditional models of stationary and mail-order sales, becoming a true e-commerce potentate. This trend is confirmed by a 22% increase in value of the German e-commerce market [Zarzycka 2014].

Till now, it has generally been a one-way tendency - we could observe openings of stores from the offline world - online. In 2014, an opposite trend was - as can be seen from the observation of more than half of respondents (56 per cent), e-stores will also develop in a stationary manner, like in the form of collection points or openings of traditional locations, increasingly operating as showrooms [Berezowski 2014].

Currently, we are also dealing with the first generation of the so-called "digital generation" - people who were born and have grown up in an Internet environment. This generation expects a wide experience related to electronic channels such as: social media, electronic banking or online shopping.

### *The status of e-commerce in Europe and worldwide*

The development of Polish e-commerce does not differ much from the global one. According to the Goldman Sachs / JP Morgan data, global e-commerce sales growth amounts to approx. 19% per annum. In Europe, this trend is similar. In 2013, the value of European e-commerce was equal to 370 billion euros. In the coming years, a 20% increase is expected, while in 2016 the turnover of e-entrepreneurs is anticipated to reach 625 billion euros.

The proficiency level and popularity of e-commerce is very diverse in EU member states. In 2013, once again, the biggest online sales were recorded in the UK (107.1 billion euros), Germany (63.4 billion) and France (51.1 billion). Total sales in these countries amounted to 221.6 billion euros, which accounted for 61% of total sales in Europe and 69% in the European Union [Harrington 2014]. The UK market is the largest in Europe - the total turnover is equal to 96.2 billion euros. Germany (50 billion) and France (45 billion) together are at the same level. In comparison, in 2012, the e-commerce turnover in the US amounted to up to 226 billion USD [Jongen and Weening 2013].

According to the European Commission, e-commerce is the main driver of economic growth and increased employment in the whole of the European Union. E-commerce in Europe, directly and indirectly, provides employment to 2 million people. It is estimated that there is a total of approx. 550 thousand e-businesses and 3.5 billion packages are sent annually. A great interest of various EU bodies in e-commerce accounts for the fact that it is noteworthy. The EU is seeking to develop best practices for e-commerce, in particular in the context of logistics. For example, the EU Communication Commission indicates that the supply of goods purchased over the Internet is one of the five most important priorities in the development of e-commerce. This is confirmed by the European Council and the European Parliament. In connection with the adoption of the Green Paper by the EU, a broad agreement has appeared between all stakeholders, both in terms of emerging issues and attempts to find common solutions [Kawa 2014].

Logistics operators, e-retailers and consumer organizations are participating in an open discussion and are undertaking more and more new initiatives in order to innovatively and constructively influence the development of solutions dedicated to this sector of the economy, and thus better meet the expectations of their customers.

Although direct commerce on the Internet is one of the pillars of the European economy, large differences in the development of this field between the mature markets of Western and Northern Europe and the developing Central Eastern Europe are noticeable:

- Western Europe (United Kingdom, Ireland, France, Benelux) has sales at the level of 177.7 billion euros, which represents 49% of the total turnover in Europe.
- Central Europe (Germany, Austria, Switzerland and Poland) ended last year with sales amounting to 93.2 billion euros (25.7% of total sales in Europe) and came in second among the regions of the Old Continent. Of course, Germany had the greatest influence here - being the second largest market in Europe.
- Southern countries (Spain, Italy, Portugal, Greece and Turkey) strengthened their third position with sales equal to 40.8 billion euros, constituting 11.2% of total European e-commerce.
- The so-called North (Scandinavia, Baltics and Iceland) took fourth place (32 billion euros, 8.8% of the European e-market).
- Eastern Europe (remaining countries with Russia in the lead) closed the list with total sales of 19.3 billion euros, constituting 5.3% of the European market (interestingly enough, these figures represent an increase year-on-year as high as 47.4%) [Harrington 2014].

### *E-commerce worldwide*

Ecommerce Europe has also published the first results of the global version of their report. Its goal was to compare the European e-market with other regions of the world. In 2013, the undisputed global leader was the Asia-Pacific region (mainly due to China). With total e-sales at the level of 406.1 billion euros (+16.7% year-on-year), this area left Europe (363.1 billion euros, +16.3%) and

North America (333.5 billion euros, +6.0%) behind. The Middle East and North Africa experienced the most dynamic growth of e-sales - up to 32.6% to 11.9 billion euros. Latin America brings up the rear with a result of 37.9 billion euros in sales (a 24.6% increase) [Harrington 2014].

The "Big Data" database resources will also certainly influence further development of e-commerce, and thus the design of supply chains. Global data is growing at a breathtaking pace - 500 million emails were recorded daily in 2013. Companies with digital profiles, such as Amazon or Wal-Mart, have effectively been using large databases for a long time in order to understand their clients. When using databases, choices and analysis can be made on the basis of something that can be measured. Challenges in the management field, including planning and supply chain design with all its primary and secondary processes, require an in-depth analysis and recognizing regularities and recurrences among data, which can then be applied to properly adapted and implemented strategies and business solutions. The amount of data which can be generated from various sources (omni-channel) also contributes directly to the fact that retailers with online and offline sales channels analyze data from social media in order to act flexibly and quickly and make conversions in their supply chains at the right time. They then focus on areas that are best diagnosed and measurable, but, on the other hand, allowing for maximum use of existing infrastructure.

## **E-COMMERCE IN THE LOGISTICS CONTEXT**

### *Evolution in logistics*

Globalization processes, a dynamic development of information technology with increasing competition have caused significant changes in the activities of economic entities. One of the many important factors to achieve this goal is the swiftness of operations as well as process effectiveness and efficiency, in turn imposing cooperation coordination, which takes on the supply chain form [Skowron-Grabowska 2010]. Since the twenties, parallel

processes of management techniques development can be observed together with their adaptation to the needs of supply chain control as well as creating and borrowing general concepts, such as process management, cost accounting, and a new angle of looking at risk management.

The Supply-Chain Council (SCC) watches over the creation and development of Supply-chain Operations Reference (SCOR) models and Design Chain Operations Reference (DCOR) models. Thanks to the SCOR process reference model, companies can quickly determine and compare the performance of standard supply chain processes against best practices in other companies in the SCC. With this model, manufacturers, suppliers, distributors and retailers have the opportunity of assessing the efficiency of their supply chains and identifying and measuring specific operational processes [Ciesielski 2009].

Today, the latest model of supply chain management is DCOR, referred to as a multi-diagnostic tool for managing supply chain design. According to its authors, the DCOR model allows to find answers to the question on how to design a supply chain from the original supplier to the final customer, through a network of manufacturers, suppliers and distributors in order to ensure that customers are satisfied with the quality, price and completeness [Wieczerzycki 2012]. Certainly, everyone operating on the e-commerce market, be it local or global, especially companies from sectors experiencing the largest sales growth year-on-year, asks themselves this same question. The supply chain strategy is influenced by demand, supply and competition in the industry, therefore, the question remains whether current supply chain strategies are developing just as rapidly as the entire e-commerce industry?

Logistics can be understood as one of following:

- logistics is an area of economic knowledge about the flow of goods and information in the economy,
- logistics is a concept of flow inventory management based on an integrated approach,

– logistics covers processes of the physical flow of material goods - raw materials, resources, semi-finished and finished products as well as related information, occurring in real time in enterprises and between them [Ciesielski 2009].

However, in every case, material flows, which have to be known and skillfully managed, are the common element which combines different logistics approaches that have to be known and skillfully managed. This signifies that the means for delivering such a purpose are flow control methods.

The importance of methods of controlling the flow of goods in modern economy also results from tasks which logistics is faced with, among which the most important are:

- improving the processes of material goods flow, so that subsequent participants of economic processes can smoothly carry out their basic functions;
- improving flow efficiency, which means the need to reduce costs associated with the movement and storage of goods;
- subordinating logistics processes to the requirements of customers.

However, the implementation of these tasks without the knowledge of the methods applied is not possible and logistics targets remain mere postulates. Nevertheless, finding and applying appropriate methods of effective flow control is not a simple matter. Among other things, this is due to the fact that the flow process is complicated, it encompasses a very large number of different tasks, warehouse management, inventory control, consolidation, maintenance, packaging, marking, coding and transport. Therefore, in diverse situations and areas of logistics, a variety of methods and techniques can be used in order to achieve this target.

E-commerce logistics varies from traditional logistics, online orders are characterized by a small number of products ordered and a large number of packages. Errors are common in such a model, therefore, extensive automation of processes based on effective management systems of not only the warehouse and its processes, but also of the

delivery of packages or potential returns is vital. When choosing a logistics solution, it is necessary to check what systems are in use.

It is, therefore, essential to distinguish logistics as a category which the e-entrepreneur should pay special attention to, and it is also a confirmation of the huge role that logistics plays in online sales. We place the value of logistics processes, meaning all the elements that have shaped today's e-commerce and have direct impact on the company's strategy on par with management and marketing. Automation of chosen logistics processes does not yet fully proceed in direct proportion to the growing importance of e-commerce. Many entrepreneurs associate logistics mainly with transport, however, few of them know that the components of logistics, which are essential for e-commerce, are also all the processes related to warehousing and supply, additional services (labeling, putting together sets, packaging, assembly, etc.), the circulation of documents, payments as well as resource planning.

From a logistics point of view, e-commerce is not just a new distribution channel, it is a change which in a revolutionary way impacts warehousing processes and inventory management. From the point of view of the warehouse or distribution center, the traditional model is based on orders generated by stores, wholesalers, intermediaries. Till now, orders were a response to market demand, being the result of planned and executed sales.

#### *What does e-commerce change then?*

Online sales cause an increase in the number of orders while reducing their complexity and value. Therefore, under the current operating structures, logistics services directed at an internet client become a primary challenge. Today, effective customer service of an e-commerce client requires both good organization and appropriate know-how, but also an efficient service process and modern logistics resources, including proper system solutions [E-commerce ... 2014].

### *Processing of returns*

As opposed to traditional commerce, online shopping is inseparably connected to deliveries to the end customer, but also to the return of merchandise and collection from the client. This last part, although not key in the entire supply chain process, is the most difficult and the most expensive. The problem of processing returns and its scale in e-commerce is still hard to define and estimate due to the fact that it is a new market for its participants, everyone involved in the process learns their rights and responsibilities once they enter this sector. Companies do not possess reliable historical data, which would allow them to properly plan the procedure of processing returns and, currently, they partly make use of solutions which to-date were dedicated to the B2B sector.

It can, therefore, be noted that the important procedure of processing product returns is still being neglected by Polish online stores. For many companies, this is one of many major barriers in the development of e-commerce and this problem is particularly visible in the case of textiles. Clothing is the third best selling product category online, right after "home and garden" and "gifts and accessories". Customers could be buying more of these products, if they had a wider range of opportunities of returning goods.

A new EU directive will be of great importance in the field of reverse logistics, it obliges e-traders to cover shipping costs in the event of cancellation by the customer within 14 days. Online stores should, therefore, devote more attention to what product and consumer rights knowledge their employees have and whether they know how to share it. This way, they can help increase customers' trust towards their store as well as towards online shopping in general [Kraska 2013].

Furthermore, according to the guidelines of the Office of Competition and Consumer Protection in Poland (OCCP), the customer will be able to choose any company to pick the item up and transport it to the store. In principle, customers already have such a possibility now, however, only a number of e-stores have adhered to this. This change

results from a judgment of the European Court of Justice, which refers to the Consumer Rights Directive of the EU enforcing Consumer Rights "on the protection of consumers in respect to distance contracts", which indicates that in the event of cancellation, the e-store should not only return the value of the goods back to the client, but also the cost of shipment [Kawa 2014].

### *Variations in the level of orders*

The challenge which people responsible for logistics and operations in online stores face are seasonal variations in the level of orders which clearly increase in the fourth quarter of each year. Variations related to the level of online stores' inventories are connected to this, which translates into the need to ensure a sufficiently large warehouse and process (production) efficiency. It is vital to remember that after the period of increased orders, it is not necessary to maintain high maximum employment or increased storage space, but in the first quarter of the new year an increased volume of returns should be expected.

A study of companies from the retail e-commerce industry (Table 1) shows that the high season - with an increased number of orders is respectively in April - June and November - December, the second period being related to the peak holiday season, of course. The volume of orders in high season periods (Christmas) increases by approx. 50% compared to other months and certainly requires increased process efficiency and warehouse space from manufacturers, logistics operators and distributors. Greater volume of orders in the fourth quarter of the year also translates into an increased volume of returns right at the beginning of the following year.

Currently, when the e-commerce market in Poland is dynamically changing and growing month-to-month, planning on the basis of historical data is quite difficult and estimates may be subject to considerable error. Therefore, until this industry reaches a certain maturity, demand should be closely monitored, that is the relationship between price and quantity which consumers are willing and able to pay at a given time.

With such a new and dynamic industry, with limited availability of historical data used in planning, the issue of direct and open cooperation between manufacturers, distributors, logistics operators and couriers is very important. Therefore, information given at the right time and the right place is key, as then a quick and efficient reaction to emerging changes is possible. On the basis of the above, it can also be assumed that target logistics processes and system solutions dedicated to the e-commerce industry must be flexible, accurate and fast. For most participants of this part of

the market, everything is new and requires a certain adaptation of the currently used solutions or creating entirely new ones. Each active participant of this supply chain, e-stores, logistics operators, couriers build their own competencies, look for the best and most effective solutions to meet the growing amount of assortment, item quantity, seasonality versus time pressure and shopping habits of Generation Y or the following ones, for who shopping on the Internet will be an absolute standard and way of life.

Table 1. Seasonality of e-commerce in the retail industry (selected industries)  
 Tabela 1. Sezonowość e-commerce w branży Retail (wybrane branże)

Month	1	2	3	4	5	6	7	8	9	10	11	12
	The percentage of the number of orders each month											
retail – industry 1	7%	8%	9%	9%	8%	10%	6%	6%	8%	8%	13%	8%
retail – industry 1	6%	6%	8%	8%	8%	10%	6%	6%	8%	8%	14%	12%
retail – industry 2	9%	8%	5%	11%	9%	8%	7%	7%	5%	7%	11%	12%

## SUMMARY

With the development of e-logistics, there are new opportunities of optimizing the logistics chain, which more and more innovative companies notice. Thanks to increasingly new models of cooperation, such as dropshipping (IT and clothing industries), there is a low-threshold of entering e-commerce. Today, a small entrepreneur with a good idea for a business does not have to stock up his warehouse without knowing the market where he wants to try out his luck. However, the scale and development of his business certainly affects and will affect the logistics of the supplier or manufacturer. Therefore, it can be concluded that the role of logistics and its great importance in e-commerce can currently be argued in many ways.

Global e-sales are growing at a very high pace, currently constituting 4 percent of total global sales. Although the infrastructure for e-commerce in developing countries is less advanced in comparison to developed countries, it is precisely these countries which, in perspective, can possibly have the biggest sales growth. As a result, over the next five or more years, the face of e-commerce will

largely change and in turn change the perception of logistics.

By 2017, the highest growth in the e-commerce sector will be recorded in Indonesia, China, India and Mexico. The US and the UK can also expect a strong increase. Large chains and stores have problems with expansion plans for they are facing a dilemma - whether to invest in developing countries with less developed infrastructure, in which the return on investment will come no earlier than after several years, or focus on mature markets with good infrastructure, but strong competition [Meyer 2013].

Currently, we are observing changes on the Polish market which had their counterpart in Western Europe as early as 2002. This is primarily connected to market segmentation, where small e-businesses now represent more than 90 percent of all e-stores in Poland. Furthermore, according to estimates from PMR Research analysts, the value of the Polish e-commerce market amounts to almost 24 billion PLN, meaning 5.7 billion euros, and at the end of 2014 it is expected to reach a value of over 27 billion PLN [PMR 2014]. Forecasts for this market are promising and talk about a doubling of its value in five years.

We can, therefore, conclude that regardless of the promising figures, consumer expectations in the context of integrating online and offline sales will continually grow, and that logistics solutions, which are currently in place, still do not always meet the requirements of management processes of tens of thousands of products of various sizes with a relatively small number of pieces on the order, or processes of complaints via e-stores or returns of goods purchased online, in a traditional store. Meeting these requirements is already influencing changes in the design of logistics solutions dedicated to this sector as well as process management, which currently represents a major challenge for distributors and logistics operators on the local and global market. Over the next months, the local market and Polish entrepreneurs will be faced with a challenge to match Western Europe in the development of e-commerce and, at the same time, begin to keep up with this development on every level. Certainly, last year's and current investments in new logistics warehouses located in Poland and dedicated to the service of e-commerce (Amazon, Inditex and, in the future, Merlin's new logistics warehouse) will have an effect on this.

The dynamic development of the e-commerce sector may contribute to the fact that traditional, stationary stores will have to remodel their existing way of functioning and adapt to the changing buying habits of modern consumers. Maybe they will need to become showrooms or places where customers can meet experts, receive full information about a product, service, or get advice on what to choose. This kind of business model will also have an impact on the change in the management of the supply chain in the current B2B sales channel and the introduction of innovation, which can be connected to a change in stereotypes and a violation of existing paradigms [Brdulak 2012].

In digital space, experience and knowledge are a battleground for competing brands. Experience is a set of key methods that determine success along with the possibility of being a pioneer in applying innovative solutions. Therefore, the key question when developing supply chain strategies may be - which strategies should we apply in order to

deliver products and services to those customer groups that we want to provide services to? And what is important - which method should we use to develop this strategy? [Gattorna 2013]. In today's rapidly changing market conditions, the choice of the supply chain strategy is crucial, because if we choose the right one, we will then be able to act faster than the competition and, at the same time, be able to predict buying behaviours of consumers on the borderline between the product and the market.

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## WPLYW E-COMMERCE NA ZMIANY W PROCESACH LOGISTYCZNYCH

**STRESZCZENIE. Wstęp:** Tematem publikacji jest opracowanie tematyki zmian zachodzących w handlu detalicznym wpływających bezpośrednio na rozwoju handlu internetowego co przekłada się na zamiany w strategii zarządzania łańcuchem logistycznym i metod sterowania przepływami.

**Materiały:** Artykuł został opracowany na podstawie analizy literatury przedmiotu wraz z określeniem wpływu handlu internetowego na zmiany w procesach logistycznych. Publikacje ujęte w opracowaniu zostały wyselekcjonowane w celu przedstawienia tematyki rozwoju handlu internetowego oraz oceny zmian w metodach sterowania przepływami. Analiza została opracowana w oparciu o doświadczenie autora oraz dostępne raporty i publikacje.

**Wyniki:** W wyniku przeprowadzonej analizy dokonano oceny poziomu zaawansowania zmian zachodzących w procesach logistycznych na rynku lokalnym i międzynarodowym oraz trendy tych zmian.

**Wnioski:** Z rozwojem handlu internetowego pojawiała się nowa strategia zarządzania łańcuchem logistycznym, obejmująca swym zasięgiem zarówno proces obsługi kanału sprzedaży online jak i offline. Wnioskować zatem można, że środkami służącym do realizacji celu będą właściwie dostosowane metody sterowania przepływami do zadań których będzie należało: usprawnienie procesów przepływu, poprawa efektywności oraz podporządkowanie procesów logistycznych wymaganiom rynku..

**Słowa kluczowe:** e-commerce, sprzedaż online, logistyka

## DER EINFLUSS DES ELEKTRONISCHEN HANDELS AUF DIE VERÄNDERUNGEN IN LOGISTISCHEN PROZESSEN

**ZUSAMMENFASSUNG. Einleitung:** Zum Thema der vorliegenden Veröffentlichung wurde eine Projizierung der sich im Einzelhandel vollziehenden Veränderungen, die die Entwicklung des Internet-Handel direkt beeinflussen, was demzufolge sich auf die Veränderungen innerhalb der Strategie für Management der Logistik-Kette sowie der Methoden für die Steuerung von Materialflüssen auswirkt.

**Material:** Der Beitrag wurde auf Grund einer Analyse der Gegenstandsliteratur samt der Ermittlung des Einflusses des Internet-Handels auf die sich in logistischen Prozessen vollziehenden Veränderungen ausgearbeitet. Die betreffenden, in der Abhandlung erfassten Veröffentlichungen wurden zwecks der Darstellung der Entwicklungsfrage innerhalb des Internet-Handels sowie zwecks der Beurteilung der Veränderungen innerhalb der Methoden für die Steuerung von Materialflüssen ausgewählt. Die Analyse wurde in Anlehnung an die eigene Erfahrung des Verfassers sowie an die vorhandenen Berichte und Veröffentlichungen zu diesem Thema vorgenommen.

**Ergebnisse:** In Folge der durchgeführten Analyse hat man eine Beurteilung des Niveaus in Bezug auf den Fortschritt der sich in logistischen Prozessen vollziehenden Veränderungen auf dem Binnen- und internationalen Markt sowie einen Hinweis auf die Trends dieser Veränderungen zustande gebracht.

**Fazit:** Parallel zur Entwicklung des Internet-Handels tauchte eine neue Strategie für Management der Logistik-Kette, die sowohl den Prozess des online-, als auch des offline-Verkaufs umfasst, auf. Man kann also ein Fazit ziehen, dass die zweckmäßig angepassten Methoden für die Steuerung der Materialflüsse die richtigen Mittel für die Ausführung der Aufgabenstellung in diesem Bereich sind. Zu solchen Aufgaben gehören wie folgt: Vervollkommnung der Materialfluss-Prozesse, Verbesserung der Effektivität und die Anpassung logistischer Prozesse an die Herausforderungen des Marktes.

**Codewörter:** elektronischer Handel (E-Handel), online-Verkauf, Logistik

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