
THE IMPORTANCE AND CHARACTERISTICS OF LOGISTICS IN ELECTRONIC COMMERCE

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***Abstract:** Contemporary trends in globalization and internationalization gives great importance to the logistic system management. Electronic commerce, as a distribution channel in contemporary business conditions, is one of possibilities for gaining competitiveness. Characteristics of logistics in electronic commerce are customized to specific product ordering, inventory management, warehousing, distribution and packaging of products which is delivered. For efficient functioning of electronic commerce it is necessary to have consistent logistic system that will be support for the electronic commerce system through warehousing, inventory, delivering products, and returning the product that is inadequate. Traditional logistics is radically changed with electronic commerce. The essence of electronic commerce has changed the way how logistics functions, which brings new challenges in gaining efficiency of logistic system.*

***Keywords:** logistic system, e-commerce, efficiency, logistic activities.*

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1. INTRODUCTION

The role of logistics in e-commerce is to reduce the risk, that arises from the virtual relations, to a minimum. Logistics in e-commerce reduces the risk in the relationship between the seller and the customer, by ensuring that the right product (ordered in a electronic shop), is in the right place (at the consumer's address), at a certain time (the duration which will be acceptable to the customer), and to specific customer in the global market.

One of the main disadvantages of e-commerce is the speed of disposal of the product which does not correspond to the speed of ordering. Namely, the speed of ordering may take a few seconds (or a few "clicks"), but time of disposal of the product is postponed until the delivery of the product, and it can take up to several days. When we talk about logistics in electronic commerce, the question is:

- How long a customer is willing to wait, and under what conditions is willing to wait longer in terms of e-commerce?
- Could logistics, under conditions of e-commerce, be considered as a critical factor of success?

In order to make e-commerce attractive way of buying, it is necessary to provide some competitive advantages to the customer in comparison to other

forms of buying the same product. Also, competitive advantage should overcome the eventual dissatisfaction with the physical unavailability of the product and the risk which customer takes in electronic commerce. Logistics has a key role in overcoming these disadvantages of e-commerce, and in conditions of e-commerce takes on new dimensions.

2. THE ESSENCE OF LOGISTICS IN E-COMMERCE

Assumptions of this research should prove a paradigm that every product that is sold in the traditional way can be sold on the Web. That involves integration of the offer, the order process, the payment process and other processes in the online sales with the logistics system, as an important element. In traditional sales, a customer buys a physical manifestation of the product (although it is not used yet), because customer buys the product with the conviction that it serves its purpose, and on the other hand the seller receives equivalent in money for the product. In the virtual world, the subject of the sales relationship is a virtual product and virtual money, and the physical manifestation of the product, its purpose and value, is in charge of logistics. Logistics system, that supports all the characteristics of electronic commerce, needs to provide and maintain a value for

which customer has decided to buy in the electronic way, rather than in the traditional way.

Electronic commerce can be a part of the electronic system in the traditional distribution (the so-called strategy "click and brick") and overall electronic solution ("pure" electronic seller). E-commerce transactions are characterized by the transfer of the product, offering, presentation, ordering and processing orders electronically - on the Internet. Electronic commerce is a revolutionary way to sell products, but also specific way for delivering product to customers. Today, customer who buys online, wants to monitor the ordered products at any time, from the time he clicks the "Buy" button, until the moment when the package arrives at his home, as well as to follow the pack, determine the cost of delivery and split orders to multiple addresses [1].

The most convenient way to perform logistic activities has been based on moving a large amount of units at the same time to the selected consumers in several geographical places. In the traditional logistics the shipment is followed through the container and pallet, not by the individual unit of goods.

With e-commerce, traditional logistics is radically changed. The typical buyer of electronic commerce is unknown entity, who ordered products on an individual basis, based on impulse, seasonal demand, prices, etc. The manufacturer or online seller must be able to adapt to individual order, deliver product directly to the customer anywhere in the world, follow the delivery in the supply chain, answer to customer inquiries, and monitor the return of the product by the customer (reverse logistics). It should also be borne in mind that the users of these logistic services have a much greater expectations, in terms of speed and reliability of delivery, in comparison with the traditional way of buying [10].

3. CHARACTERISTICS OF LOGISTIC ACTIVITIES IN ELECTRONIC COMMERCE

Characteristics of logistics in electronic commerce are evident in every logistic activity. Distribution challenges are reflected in the delivery of several smaller logistics units in different locations, so it is necessary to integrate all aspects of shipment management, multi-modal distribution, monitoring of routes and timing, and management of transit and receiving shipments. Warehousing in electronic commerce implies the existence of warehouse management system, which should enable easier tracking of products in the warehouse

and quickly preparation and sending the ordered products. Procurement system should be integrated so that follows requirements, adequately manages inventory, monitors inventory by accounting inventory, plans the sale, so that the products that have the potential and frequency of purchase are available, and that products which are not purchased do not create additional costs. Adequate documentation in the logistics and management of the delivery process is necessary to provide shipment tracking and recognition of items, and mobile applications should provide shipment tracking for all stakeholders (including customer who purchased the product). The process of reverse logistics includes all mentioned activities in the process of returning the product. The management of this process needs to answer the question what to do with the product that is returned, and find the right solution for the customer that had returned the product.

The main areas of business logistics system include [6]: implementation of orders, inventory, warehousing, transportation and packaging, which have new dimensions in terms of e-commerce. Starting from orders, in electronic commerce, orders are collected electronically, from customers on the website, and sent to realization.

3.1 Implementation of Orders in Electronic Commerce - Electronic Form of Order

Ordering products in electronic commerce is the first step in this particular complex logistics process. After selection of the product on the website, the customer creates an electronic order which includes personal data such as: name, e-mail address for electronic communication and verification, address for delivering, method of delivery (which will determine the time of disposal of the product), method of payment, contact phone number and similar information. Most electronic stores use authentication, by setting a single question to a potential customer, or printing the order of letters and numbers in a field. Transferring selected products in the electronic basket and confirming payment and delivery, the customer orders the product.

As a confirmation of the created order with the data entered, the customer gets email message that verifies information. The electronic message usually includes confirmation of inserted data, and a username and password of a potential customer. If customer decides to purchase and confirms the conditions of purchase ordering, receives on the same email address electronic form of order or

invoice (if customer has decided to pay by cash on delivery).

3.2 Inventory Management in Electronic Commerce

One of the least explained activities of marketing logistics is planning and inventory management (including in electronic commerce), in an ideal world there would be no need for inventory, because sellers can accurately predict demand, but unfortunately the world is not perfect and the forecasts are not accurate [9]. The complexity of inventory management in e-commerce is reflected in the fact that it is performed in the global market, because the seller can not predict who will be a customer, nor the demand for the product. Seems almost impossible to determine the optimal level of inventory, because the demand for a particular product in one period may be small, while in the future may exceed the available quantities. In this segment it is important to follow demand impulses and respond adequately to changes, so that in case of declining demand there could be easily found a way to sold the amount of inventories (through discounts, sales with a similar product, as a present with the new version of the same product, etc.).

Also, different models and inventory management systems are available to members of the supply chain, based on a constant exchanges of information and joint planning of business operations. Among all models, stands out model called "Collaborative Planning, Forecasting and Replenishment" (CPFR model) [3]. The positive effects of its implementation are reflected in improving the forecasting process (30 to 40%), increasing the level of customer service and sales (15% to 60%) and shorter ordering cycles (from 15% to 20%) [5].

3.3 Warehouse Management in Electronic Commerce – Operation of Distribution Center

E-commerce logistics system includes offices, centers for consolidation of orders and sending ordered goods, warehouses, customer service and software development centers. Depending on the organization of electronic sales, electronic sellers have consolidated some functions, such as storage location and unifying orders, and so on. Centers for sending the ordered goods are usually located near the airport. These centers include adequate storage space.

The warehouse of electronic seller has a single central computer that collects information on the location of the goods and trail maps. Each employee handles PDA device that controls the condition and

location of the goods in the warehouse. During one day of work in the warehouse of one of the global electronic sellers, an employee can exceed more than 10 miles per day in the affairs of placement and distribution of goods. The common practice of electronic sellers is hiring a part-time workers in distribution centers, and thus lower labor costs.

3.4 The Role of Distribution in Electronic Commerce

The role of distribution in e-commerce is reflected in the transmission of the ordered product to the place of delivery specified by the customer. Transportation in electronic commerce is primarily related to the delivery of ordered products to the customer's address. The distribution channel has some changes under the influence of a large number of smaller units of delivery for transportation, and dispersion of individual orders. Customers in electronic commerce are setting new requirements for the distribution of products, such as shipment tracking during delivery. Therefore, it is necessary to provide a higher level of service in terms of availability of information and speed of delivery.

Changes in the distribution of products in electronic commerce are also under the influence of the type of product that is ordered, so [8]:

- For some products, there is no physical distribution (such as digital products, software, digital content, information, etc.);
- For many products that can be ordered electronically there is already physical distribution (eg. ordered books are distributed through the existing fast delivery service to home address by post, products like appliances have traditional distribution network for delivering to home address), and
- For some products there is no physical distribution channel, and it is necessary to develop new modes of transportation and delivery (eg. delivery of general merchandise and groceries requires a completely new means of transportation that would not compromise the quality and freshness of the product).

According to some studies the distribution sector has been identified as the biggest obstacles to further development of e-commerce [2]. According to the study by Anderson Consulting, six of the 10 most common problems in an online selling is associated with the delivery of the product [7]. The biggest challenge remains to deliver general merchandise and groceries (with the range which consists of 10-25,000 products, and includes three temperature

zones) where the order must be implemented within 12 to 24 hours.

3.5 The Role of Packaging in Electronic Commerce

Packaging in electronic commerce is primarily concerned with the preservation of products during shipping and delivering the product to the customer, and partly on the product packaging in stocks. When we talk about the packaging of the product during shipping, there are three main aspects of packaging, such as [4]:

- Protection - helps to protect against damages during transport and transit;
- Presentation - gives the first impression of the product, and
- The cost of packaging – has influence on the decision on the type of transport.

The decision on packaging involves assessing which of these functions of packaging is more important for electronic seller and the customer. On the one hand, it is necessary to take into account the damage that may occur during transportation of the product, on the other hand, there are costs that would result in an additional packaging and protective packaging. It is necessary to take into account how the product is packed, how will be manipulated and from what needs to be protected in the manipulation. Packets, sent to the customer in electronic commerce, are usually small and very light. Very easy packs are easily manipulated, it might be expected that products in them could be damaged in handling, so it is necessary to have adequate protection. If the packet of product is sent out of the country, it can be assumed that it will change means of transport, which increases the likelihood of falling, the impact of weather conditions, moisture and other external factors, from which the product must be protected.

4. CONCLUSION

Traditional logistics is radically changed in conditions of electronic commerce. Logistics system, that has and supports all characteristics of electronic commerce, needs to provide and maintain a value for which customer has decided to buy in the electronic way, rather than in the traditional way. It should also be borne in mind that the users of logistic services in electronic commerce have a much greater expectations, in terms of speed and reliability of delivery. All logistic activities applied in electronic commerce environment need to be adjusted to special needs of this complex way of buying. In that way, it is essential to be considered, that all specific logistic activities take different principles of functioning in terms of electronic commerce.

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