Agile Logistics Strategy as the Determinant of Supply Chain Management – the Textile Industry Case Study

Piotr LUBINSKI¹,a,*, Dorota DOLIWA²,b and Agnieszka STACHOWIAK³,c
¹Poznan University of Technology, Poland
²LPP S.A., Gdańsk, Polska
³Poznan University of Technology, Poland

a piotr.lubinski@put.poznan.pl; b dorotadoliwa@wp.pl; c agnieszka.stachowiak@put.poznan.pl

*Corresponding author

Keywords: Logistics strategy, Supply chain management, Agility

Abstract. The goal of the paper is to present the organizational aspects of the delivery cycle of industrial products for individual recipients. The authors conducted their research and analysis in the clothing industry, as a representative of a relatively low level of complexity of products, but also high variety and volatility of demand and high expectations represented by clients concerning efficient delivery, thus functioning in the conditions requiring flexibility and agility of management. It seems that such a model will become common for the majority of manufacturing enterprises.

Introduction

The basis of the company’s performance is producing products, providing services or a combination of both. Companies plan to achieve goals and manage all of their actions to achieve them, which means they implement the strategy, individually determined by the goals definition. The corporate strategy is the concept of systemic operation, involving the formation of a set of long-term business objectives and their modification according to changes in its environment, determining the resources needed to achieve these objectives and procedures to ensure optimal distribution and use of resources in order to flexibly respond to market challenges and ensure favorable conditions for the existence and development of the company [1]. Contemporary strategies are either lean or agile oriented, or benefit from the combination of approaches [2].

Companies wishing to effectively implement their plans, must transform their general strategy to the individual functions (i.e. marketing, production, maintenance, sales, finance, logistics) and ensure consistency between the various functions [3, 4]. Logistics’ location among functions of a company indicates that logistics strategies belong to the group of functional strategies. Logistics strategies are ancillary to corporate strategy and meet business objectives in the area of logistics. Moreover, they should also be closely coordinated with other functional strategies and customized to company’s internal situation and the environment. Logistics strategies are the modes of dealing with the development and operation of the logistics system. They provide model solutions in the area of planning material flows, distribution, forming relationships with suppliers and customers, based on specific localization of decoupling point in the logistics system [5, 6]. They are specific procedures for the operation with certain schemes for implementation and evaluation [7].
The paper is to present a specific logistics strategy of a company operating in the clothing industry and operational effects of the strategy implementation, emerging from specific characteristics of the business (flexible and agile) and environment (dynamic, turbulent). The paper is composed of five sections, including business framework, logistics strategy definition and its operational realization. The last part is the conclusion section.

**Business Framework**

In the early nineties of the twentieth century the MISTRAL S.C. trading company, and since 1995 it has continued its operations as LPP S.A. Initially, the company’s business was based on selling t-shirts made in Asia to hypermarkets. The consequence of the development strategy introduced in the LPP was creating its own brand – RESERVED – and building their own retail network. The first RESERVED store was opened in 2000, and high dynamics of company’s development made it possible to launch 24 showrooms at the end of 2001.

Currently, LPP’s business is design and distribution of clothing, moreover it owns five apparel brands including Reserved, Cropp, HOUSE, MOHITO, SINSAY and a new brand TALLINDER. The company since 2001 is listed on the Warsaw Stock Exchange. The headquarters is located in Gdansk, where there are also design facilities for the brands: Reserved, Cropp, SINSAY and TALLINDER. LPP SA also has a branch in Krakow, where the design facilities for brands HOUSE and MOHITO are located. The company provides its customers with clothing of good quality and latest design. It offers clothing for women, men, youth and children. LPP SA uses several distribution channels for their products. It focuses primarily on retail sales through its own chain stores located mainly in shopping centers. Its products are now available in more than 600 showrooms in Poland and 350 showrooms abroad. The company exports its products to countries in Central and Eastern Europe (Czech Republic, Slovakia, Hungary, Lithuania, Latvia, Estonia, Ukraine, Russia, Romania and Bulgaria). Recently, to the group of export countries joined Germany and the countries of the Middle East (Egypt, Qatar, Kuwait). From 2014 LPP has been benefiting from e-commerce solutions by opening online stores for all its brands.

**Logistics Strategy**

LPP SA is a company that since its inception sought to apply the principle of centralization of storage. Thanks to such approach, better space utilization, higher availability and lower storage CPU was provided [8]. The strategy of centralized storage became less common in the globalization era, when supply chains became supply nets and businesses dispersed all over the world, however benefits emerging from its application make it a perfect solution both with respect to lean requirements (low cost, high resources utilization) [2] and to agile paradigm (availability of products and flexibility of assortment) [9].

The strategic assumptions taken at the very beginning had to verified, as very dynamic development of the company was the cause of distributing the storage area. Since the company's central warehouse was not sufficient some additional storage space was rented. For formal and organizational reasons, the additional warehouses were customs locked, which unfortunately increased lead-time and influenced customer service level. Further development of the company, the increase in demand for its products and increasing performance requirements towards such logistics functions as transport, storage, sorting and distribution resulted in the biggest
investment in the history of the company. In September 2008, distribution center in Pruszczy
Gdanski was opened, and in 2014 it required significant extension. The centralized strategy
became again the leading logistics solution. As a result, the facility became one of the most
modern distribution centers in central Europe, both in terms of the complexity of the technology
and logistics processes, benefiting from 66,000 square meters warehousing area. The center is
equipped with four modern sorting equipment two Bombay sorters, a "Pick to light" sorting
department and a "cross-belt" sorter. To support extensive material flows, advanced solutions
for information flow needed to be introduced as well. A key functional element of the distrib-
ution center is the new warehouse managing system and MFC (Material Flow Control) ap-
lication as a middleware between the warehouses control and storage system. WMS oversees
the logistics process and management of warehouse locations at the level of logistics business,
while MFC supports internal flows at the level of the conveyors. The integration of the IT
solutions is with the ERP system. The ERP system generates orders for clients, which in the
case of LPP SA are the showrooms. The orders are transmitted to the WMS and initiate every
cycle of picking orders [10].

**Operational Aspects of Supply Chain Management**

The LPP SA is selling five brands of clothing, in an extensive network of retail stores. Clothing
offered for sale is designed in Poland and production is outsourced to Asia. The finished
product is transported to a distribution center in Pruszczy Gdanski usually by sea. There are also
supplies by air or carried overland. All these factors make the lead-time nearly 6 months, which
compared to other businesses within the industry is a very good result. Many established
competitors in the market obtained the lead-time at the level of 12-18 months.

A very important and very difficult element in this type of business is to estimate demand,
which is determined as much in advance, moreover is volatile and fashion-based. The large staff
is responsible for the demand forecast, the relevant goods and the image of the salons and the
collection developed for final customers. Each brand has its staff of professionals who take care
of its development.

The criterion for products differentiation is the season, which makes two groups typical of
the clothing industry, i.e., spring - summer and autumn - winter. Quantitative plans of demand
are developed for one season and for each brand separately, and defined separately for de-
partments such as women, men, lingerie, accessories and shoes, and taking into account the
assortment groups, e.g. T-shirts, shirts, dresses, pants, socks, etc.

In order to determine the quantitative demand for each season, for a particular assortment
group the following should be considered:

- the number and capacity of existing stores,
- the number and capacity of stores to be opened in the season,
- average sales of each showroom, in the case of stores not open yet, it is the expected
  value.

LPP SA launches new models every day and manages deliveries from the manufacturers, so
that each model got to all the showrooms in all the countries to be sold on the same day.

In the figure 1 the comparison of the amount planned for receiving in the distribution center
to the amount actually taken in the same period of time is presented. The time scope is the first
20 weeks of 2015. The graph shows that the difference between the amount planned and actu-
ally accepted is non-significant. These differences arise only from a delay in the production of
clothing, delay in delivery or the lack of complete documentation, which is required for the clearance of goods. These causes are very rare, resulting in the good implementation of the predefined plan.

Looking at the quantities planned to be sent and the quantities actually sent to the entire network of retail stores in the same period of time (Fig. 2), discrepancies are observed in every week. In extreme cases, this difference is more than 780 thousand pcs., and the average is 282 thousand pcs.

The main causes of fluctuations in demand, which directly affect the demand of goods in the shops include:

- political or financial condition of society,
- weather conditions, e.g. a long winter or sudden warming,
- fluctuations in sales associated with the annual holidays
- the introduction of promotional campaigns in the LPP SA chain stores
- the introduction of promotional campaigns in competing stores, at the passivity of LPP SA,
- collection offered to customers.

The unstable demand makes the operational management in the company flexible and agile, to cope with uncertainty.
Fluctuations in the number of units shipped to stores also have a direct impact on the level of stock in the warehouse. When the sale is higher than planned, the inventory decreases. However, when plans are not executed for the extended period of time, inventory increases. Figure 3 shows the stock level in the reporting period.

![Figure 3. Stock level in weeks 1-20 of 2015. Source: Own work.](image)

It should be noted that from week 1 to week 13 the stocks gradually increasing. Then in weeks 13-19 is maintained at a similar level and in week 20 decrease is observed. The direct cause of this fact is increase in sales in week 19, which resulted from a significant increase in sales in the retail network.

**Conclusion**

The fashion industry is a rapidly growing part of the industry. It seems that the most-important requirement it faces is fast reaction to changing trends. This is related generally to the need to produce frequently changing collections and high frequency of admission of goods to the warehouses and to retail stores. Despite difficult market conditions, resulting from the rapid variability of fashion, and therefore demand, seasonality, intensity of international competition and barriers of organizational nature, volume of stocks of final goods in the company is low, and the scale of seasonal sales is limited. The essence of the company is to provide customers with exactly what they just come to expect. Current fashion trends should soon materialize on the shelves of the retail network - from design through production and organization of deliveries, until the goods display on the shelves of shops may not take more than several days. This example provides a model for future logistics requirements. It is agile and adaptive to changing market conditions and despite the significant costs is able to provide a competitive advantage-sized enterprise as a whole. That is why the recommended for LPP SA approach, basing on analysis of its strategy and current performance is continuing its strategy on one hand, but on the other introducing some new elements to it – especially elements of agile management, benchmarked from its greatest competitor: Inditex.
References


