

LOGISTICS ACTIVITIES IN RELATION TO TANGIBLE AND INTANGIBLE OPERATIONS

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1 Transportation as a logistic process

Transport of goods is carried out by certain technologies, which are called **logistics technologies**. Best known are for example:

- Just in time (JIT),
- Kanban,
- Cross – Docking,
- Hub and Spoke (H&S),
- From house to house,
- Quick Response (QR),
- Efficient Consumer Response (ECR),
- Combined transport (KD),
- and others.

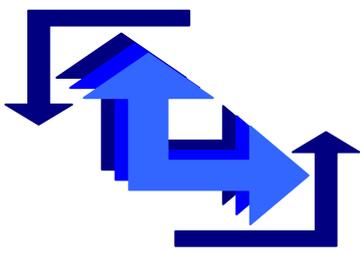
Just in time

It is the best known logistics technology. It lies in meeting the needs for a given material in the production or for a finished product in the distribution chain by its delivery just in time, i.e. in precisely defined and maintained times specified by the customer. Some companies such as Apple even penalize early deliveries. They are available in small quantities, in the earliest possible moment. Deliveries are very frequent and thus may concur in the logistics chain, with only minimal safety stock. Stocks are maintained even for several hours [6].

System Kanban

Recently the role of this system in production and logistics activity is growing.

It lies in the delivery of material directly into production on the basis of specialized transportation resources and labels that play the role of the order between different parts of the production. This system enables continuous production without the need for stock production, because the instruction for delivery of a given part is



done by customer sending a given mean of transport which is an impulse for suppliers to start a production [6].

Gross – Docking

It is a method of product distribution based on the consolidation of smaller supplies from several suppliers for one customer.

Hub and Spoke (H&S)

This technology belongs to most used technologies for territory logistics services.

H & S is based on association and separation of small shipments so that the critical transport distance, which is the distance between origin and destination center, or hub, have been operated through regular, speed and capacity transportation systems. This can eliminate the increase in the number of administered items in their decreasing average size and increasing the number of inputs. Capacitive distance transportation is more economical and more environmentally friendly than currents of light commercial vehicles. Those are reserved for flexible collection and distribution of shipments in attraction circuits of logistic centers or transport hubs.

From house to house

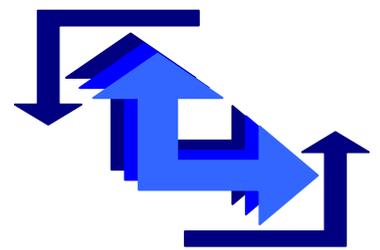
The concept of transport from "house to house" is one of the oldest transport logistics systems. It can be realized by a single way (e.g. road or rail) or by more ways of transport (combined transport). The principle of logistics technology lies in the fact that customers are provided with all services related to transport from suppliers to a "door" on one forward document.

In the Czech Republic this is mainly done by road or rail transport, or if necessary using both types.

Quick Response (QR)

The system of a rapid response is a strategy used in the retail sector, which is a combination of several tactics aimed at improving inventory management and increase efficiency by accelerating the flow of supplies. Today most of QR systems operate mainly in the relationship between manufacturers and retailers. The full implementation of the QR system includes the application of the principle of JIT in the supply / logistics chain, i.e. from suppliers of raw materials to the final customer.

This system operates on a basis of combination of electronic data interchange (EDI) and a system of bar code between the links of the chain.



Efficient Consumer Response (ECR)

This is a special variant of the previous system of QR, which developed in the food product system. The participants are both manufacturing companies with suppliers, wholesale and retail. The assumptions are based on the application of ECR to the full implementation of automatic identification of goods, electronic data interchange, electronic transfer of money of bank data, etc. What is important is the intensive cooperation between the food industry and market to meet the needs and desires of end customers.

The system focuses on the values of logistic chains and eliminates the activities that do not add any value.

Combined transport

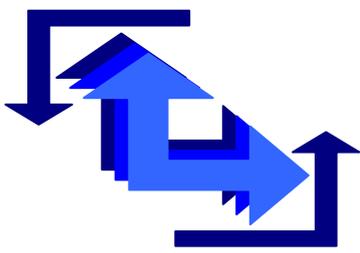
The basic role of freight transport is to satisfy forwarding needs of customers. The main assumptions of a reliable transport operation are to create and guide the functional transport system under various modes of transport and coordinated development of the system as a whole. Among these systems the most important is an intermodal or combined transport. The advantage of such a solution is to take advantage of different transport modes. Using the combined transport, a major part of the route is made by rail, by inland waterway or by sea and the local collection or delivery is done by the shortest route by road.

Essential elements of combined transport are the unified modal transport units that in our conditions are containers and swap bodies. Intermodal transport is based on the transport of goods in one and the same loading unit or vehicle by gradually using various modes of transport without handling the goods when changing the modes.

2 Logistic activities related to intangible operations

2.1 Forwarding

Forwarding services are without any doubts one of the most important parts of logistics. If a company decides not to organize the transport itself, forwarders have a wide range of possibilities in logistics management. At present, forwarding or carrying business the link between the supplier or customer and the carrier. It actually organizes, manages and coordinates all transports to ensure the delivery of goods at the right time at right place. Freight forwarder organizes the transportation of goods for commerce and industry based on logistic principles and thus minimizes transportation costs and risks, further advising principals on all transportation issues, helps with transportation, providing transport and implementing effective measures to ensure that



the consignment reached the recipient properly on due time. For the forwarding the best route and means of transport is chosen.

2.2 Customs, trade and financial activities

During international transport, i.e. during export, import or transit it is necessary to perform the customs clearance of goods which is governed by customs regulations - such services can provide a company itself or through an external provider (specialised companies, freight forwarders, logistics centers, etc.).

The commercial activities include the sale of freight forwarding services, rental of storage space or spaces, and storage, then here we can include rental of pallets and containers, rental of means of transport, etc.

Financial activities can be divided into three types. The first type will be the financing as such, another group is financial activities that include payments to customers and third activity is actually financial services provided to customers.

3 Other logistics activities

3.1 Service and consultancy services

Customer service is one option how to gain a competitive advantage at market. Today most markets are already so advanced that competition through price, quality and utility value of products may be quite inadequate. Then the differences in the field of customer service become important. Customer service is the outcome of logistics system and through customer service performance its good or bad behaviour can be measured by.

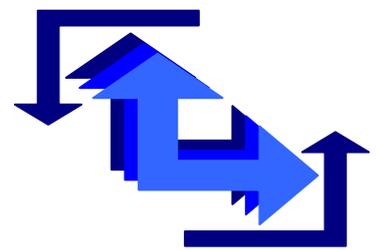
The service can be divided into two basic components:

- service provided to internal departments (internal customers) - a service for the production or marketing, etc., its level affects the company's ability to meet the needs of external customers,
- service provided to external customers - has an impact on maintaining existing customers and to attract new ones.

The level of customer service has a direct impact on the share of a company of the market, of the overall logistics costs and thus of profitability. Here it is important to consider the use of the external service providers and to what extent.

3.2 Logistics communications

The important role in logistics communications is played by logistics information systems. Information technology is used in logistics for many years and their importance for this field grows.



The base of logistics communication lays in the work with the customer orders. In this case, the focus is mainly on the speed and quality of information flow, because these are the factors that could significantly affect the costs.

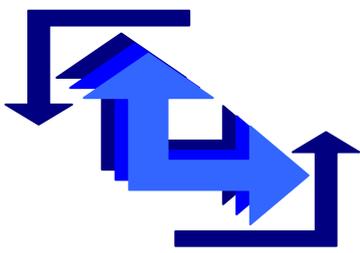
IT technologies are not only used for admission of orders, but also in the management of stocks of finished goods, in measuring of performance, in the process of transportation management and warehouse management. Logistics information systems are therefore considered an essential element of competition. Each company is trying to reduce the order cycle time, to improve reaction speed and to reduce inventory levels in the logistics chain, for which one can use logistics technologies, such as a rapid response system, a system of just-in-time system or an effective response to customer. These systems are based on a combination of various information technologies. Company management also uses decision support systems, which are specialized computer systems to enable better decisions, or even different expert systems.

3.3 Logistic Information System

Logistics information system must be based primarily on customer needs. They increase their expectations and requirements for the suppliers. They require not only reliable delivery times, balanced order cycles, but also a high awareness regarding the availability of goods in stock, the expected arrival of supplies, orders status, delivery status, etc. We can say that customers require an integrated logistics system, supported by integrated logistics information system. Fulfilling customer expectations is possible using modern technologies, which include bar codes, electronic cash register systems for collecting and transmitting data, systems for electronic funds transfer, EDI system, etc.

Information system supports efforts of a company to improve its business processes because it provides customers with more accurate performance of their orders. The more the system is automatized, fewer errors which are caused by human are produced. The quality of customer service improves, because it shortens order cycle time and improves the balance. The advantage for customers is to obtain current information on stock availability, order status and delivery. Advanced logistics information systems support in this way the process Total Quality Management.

Logistics information system can be used also to support strategic decision making. Other specialized systems provide flexibility and support for logistics decisions based on logistics information. It is primarily a decision support systems.



Literatura

- [1] KUBASÁKOVÁ, I.: Logistické systémy používané v súčasnosti, medzinárodná vedecká konferencia- Trendy hospodárskeho a sociálneho rozvoja v krajinách EÚ, 28.9-29.9.2005, Trenčín, SR, ISBN 80-8075-094-7.
- [2] KUBASÁKOVÁ, I.: Outsourcing logistických operácií v podnikoch v Európe a v USA, Elektronický odborný časopis o železničnej doprave a preprave, logistike a manažmente, 3/2007, Žilina, ISSN 1336-7943, Vydala Katedra železničnej dopravy, F PEDAS, Žilina, SR.
- [3] BUKOVÁ, B. a kol.: *Zasielateľstvo a logistické činnosti*. Bratislava: Iura Edition, 2008. s. 217., ISBN 978-80-8078-232-0
- [4] BLAHO, P., ZITRICKÝ, V.: *Marketingový pohľad na činnosti poskytované v balíku služieb prístupu na dopravnú cestu*, In: PKP w Unii - potrzeby i możliwości : konferencja naukowo-techniczna, Kołobrzeg, 18-20 czerwca 2008 r. : materiały konferencyjne. - Wrocław: EUROSYSYSTEM, 2008. - ISBN 978-83-61348-28-3. - S. 129-133.
- [5] BUKOVÁ, B., KUDLÁČKOVÁ, N. *Outsourcing in forwarding agency*. In scientific journal LOGI, Pardubice, number 1, vol. 1, 2010. p. 14 – 19. ISSN 1804-3216

Summary

The paper deals with the logistics activities in relation to tangible and intangible operations. Forwarding services are without any doubts one of the most important parts of logistics. If a company decides not to organize the transport itself, forwarders have a wide range of possibilities in logistics management.

Key words

Logistics, forwarding, logistics management, information system

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