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## Supply chain management and logistics in distribution in the manufacturing company

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### ABSTRACT

With aid of 'logistics' term, we can assume that logistics of production is oriented on planning, organizing, leading and controlling the effective flow of materials and other cooperative elements required in the manufacturing process and respective information, beginning with supply warehouses, through all intermediary production facilities, and ending with warehouses for finished goods and the sales. According to such description of production logistics we can assume, that it does not cope with sole production in terms of performed technological tasks, but is concentrated on the organization of production system in terms of establishing conditions and performance of undisturbed and optimal flow for materials through all production processes. Managing the flow for materials in the production process is generally dependant from manufacturing profile, as well as from the level of organization and concept for company's management. Production processes are dependant from type of manufacturing organization, what is understood as the level of specialization in the manufacturing cells and related level of stability in the manufacturing process.

The purpose of this papers is description of supply chain management as the element of logistics and its functioning in logistic company.

**Keywords:** management, logistics, production, distribution, production company, supply chain

### 1. SUPPLY CHAIN

Company's management is directly related with the requirement of making decisions that can pertain to various levels and layers. Basic division is made into decisions of operative

and strategic character. First type of decisions is characterised with the level of reality and definiteness. The second type of decisions are related with significant level of abstraction and they often require creative and unconventional attempt. In the area of strategic decisions, they can be assigned to respective layers [3]:

- corporation - refers to the selection of product portfolio - markets,
- particular units - it generally refers to the achievement of competitive advantage,
- functions performed in particular organization - it is related with the performance of particular organizational functions (processes, operations, tasks) and with the achievement of particular financial result.

One basic element in the framework of logistic analysis is logistic chain [4]. It was created following the company's value chain theory and its reach covers holistic insight into the product, from the moment of obtaining the resources required for its production, until product use by its final purchaser. Logistic chain as logistics base is such a warehousing and transportation chain, that - with support of IT - is technological combination of warehousing and trans-shipping points on the transportation route for goods, as well as organizational and financial coordination of logistic operations, including ordering processes and stock policy [5]. Logistic chain is basic in the identification of particular processes and supporting services. It is particularly important in case of identification of obsolete elements (links) (i.e. doubling ones), that when eliminated influence on the increased level of optimization in the whole process. It also supports decisions on mutual connection and coordination of particular entities as links [6]. The most important element is respective level of integration, that pertains not only to processes from technological point of view, but also to integration of quality (i.e. exchange of information and its interpretation) [22]. Respective management for logistic chain significantly influences on the level of service for final customer, and it subsequently supports the increased level of competitiveness for all partners [7].

One condition for efficient and effective operation of supply chain is establishing the connections with respective strength among its particular links. Such situation can be created with the respective system of contracts among partners or the selection of some strategy for connections. Particular role is attributed to partnership, namely the opportunity of getting synergic effects and elimination of "bullwhip" effect. The basic characteristics for system of such type is long-term attempt, trust, division of risk and costs, as well as resignation from the performance of individual purposes on behalf of goals in the created partnership and pursuing long-time benefits related with competitive advantage and created values [8]. It means that partner for mutually established added value should be found, who can fulfil the following criteria [9]:

- capacity of creating technological progress (know-how) and of solving the innovation problems;
- readiness and capacity for complex quality management, implementation of common systems providing the quality including audit and certification;
- using transparent account of costs (transparent calculation) and permanently improved prices.

Supply chain management means the integration of management for the sequences in logistic flow, processing and tasks related with the service, beginning with suppliers and ending with final customers, required for manufacturing the product or service in the efficient

and effective way. Supply chain covers all steps and functions, directly or indirectly related with satisfaction of customer's needs. Supply chain covers not only manufacturers and suppliers, but also freight providers, wholesalers, retailers and sole customers [10].

On manufacturer's side, supply chain covers all functions related with satisfaction of customer's needs [11]:

- Development of new product
- Marketing,
- Production,
- Distribution,
- Finances,
- Customer service

## **2. DEVELOPMENT STEPS IN SUPPLY CHAIN MANAGEMENT**

### **Step I: physical distribution (logistic distribution systems)**

Systemic management for the sequence of related tasks: handling materials, packing, controlling the flow for finished goods and stock level, warehousing, distribution, transport, in order to effectively deliver finished goods to customers [12].

Causes:

- Extended assortment of manufactured goods
- Increase in freight rates
- Manufacturing the products with higher value

Companies saw the dependence between stock costs and transport costs from systemic point of view, or from total cost point of view, and began hiring managers for physical distribution [13]. They thrived for decreased total cost of physical distribution by managing the trade-off systemic relations (one thing in exchange for other thing)

### **Step II: integrated logistic management**

The integration of supply and production zone with distribution zone into one logistic system

Benefits [14]:

- Chance for managing the whole process, beginning with purchased materials, through production in progress, until finished goods, as one unit and with application of systemic attempt
- Effective application of such strategies and management methods, such as just in time (JIT), lean production and total quality management

### **Step III: managing the supply chain**

Extended attempt to logistic processes covering all companies participating in delivery of proper product to final customer, with proper cost, in proper time, in proper state and in proper quantity. The concept based on strict cooperation or alliances between the manufacturing companies and their suppliers, customers (distribution channels) and other participants, such as transport companies, public warehouses (logistic centres) and

wholesalers. The analysis of trade-off/total cost relation and the analysis of value chain can be used in supply chain [15]. Purpose: the execution of optimal strategy in whole logistic chain.

Problems: how to make decisions in order to provide satisfaction to all members in supply chain from your proposal. Application of i.e. ECR (Efficient Customer Response) in the packaged food industry. Increased speed of packaged food product flow, beginning with wholesalers, distributors, until the end customer. Required elimination of purchasing practices applied in advance by big wholesalers and retailers, who got used to promotional price discounts at the end of quarter, what led to increase in margins [16].

### **3. LEADER IN SUPPLY CHAIN**

Leader is precisely stipulated in the successful supply chain, and his dominating role is recognized with inferior position taken by other members in supply chain. The role of leader can be attributed to the company initiating the establishment of supply chain. The leader's attributes are as follows: company's size, permanent connections with customers, wide franchise network. The condition for supply chain success are constructive leader's actions, who can stimulate the cooperative behaviour of all members in supply chain [17].

The essence of leadership in the supply chain is stimulating the logistic function of integration of members in the supply chain with simultaneous performance of superior supply chain's goals. Establishing the vision of potential benefits arising from entering into supply chain is critical task for its leader, accepted by its members [18].

Examples of arguments of potential leaders when reasoning other companies into entering into created supply chain [18]:

- Company trading the mass products - required elimination of any wastage and doubling in the relations between the preferred suppliers and trade and logistic services in the company. Members in the chain will be fully sharing the information and will modify own operations for improvement of competitiveness. Company offers sharing the achieved benefits with preferred suppliers who cater for the company's needs.
- Manufacturer of devices - mutual exchange of information and technology with purpose of reduced total time in the supply chain cycle and its costs, that must resemble the unique requirements of individual customers;
- Manufacturer of computers - safe, quick and simplified supply of values expected by customers, in order to achieve the leading competitive position by the chain;
- Big retailer for tools - sharing the information with purpose of short and reliable supplies and required accessibility of goods. Retailer is engaged in developing long-term partnership relations with suppliers, who aim for mutually planned trade and logistic operations;
- Manufacturer of medical products - maximization of customer's satisfaction and profitability with means of created global-class supply chain, that promotes perfect organization, with application of IT technologies enabling the management of relations in the chain and physical flow of products in global scale.

### Supply chain strategies

- **Marketing and sales strategy** it determines the way, in which market will be divided into segments and the position of product, the price and promotion;
- **Product development strategy** it describes the portfolio of new products, that company will try to develop. It also stipulates, whether development will be executed internally or externally (outsourcing);
- **Supply chain strategy** determines the method of purchasing the goods, transport to and from the plant, production of products or handling them for the provision of service and distribution of product to customer. Supply chain strategy specifies, what will be done exceptionally well in the production, distribution or service. Decisions for stock, transport, production facilities and information flow in the supply chain are parts of supply chain strategy [19].

## 4. SUPPLY CHAIN STRATEGIES IN THE PRODUCTION COMPANY

The following supply chain strategies can be discerned:

- Lean strategy - lean flow strategy, leant production and leant thinking
- *Agile Strategy* – strategy of agile flow, agile production, elasticity and quick response to changes
- *Lean-Agile Strategy* – supply chain strategy in the lean processes in the supply's up-flow from decoupling point and in agile processes in the supply's down-flow.

Lean-Agile Strategy combination of lean and agile flow strategy in the strategy of the stipulated supply chain. Order Decoupling Point decouples the area of activities stimulated by customers orders (Agile processes) from the area of activities determined by prognosis (Lean processes). Scheduling the flow level in the supply's up-flow (following the forecasts), developing the agile and quick reaction in the supply's down-flow too often, quick and hardly foreseen changes in demand [20].

## 5. CONCLUSIONS

Supply chain management and logistics of distribution in the production company has evaluated within the years, what resulted in the optimization of processes with purpose of the best service provided to final customer. One condition for efficient and effective operation of supply chain is establishing the connections with respective strength among its particular links. Described dependants are of decisive importance in decisions made by manufacturing companies, who want to achieve the leader's position on the market [21].

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