

## SYSTEMS OF SUPPLY AND DISTRIBUTION IN LOGISITC MANAGEMENT IN COMMERCE ENTERPRISES

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*ABSTRACT: One of the main tasks of commerce enterprises is active participation in the distribution chain. This is related to striving at adjustment of the offer of the firm to consumers' demands.*

*Keywords: logistic management, supply, distribution*

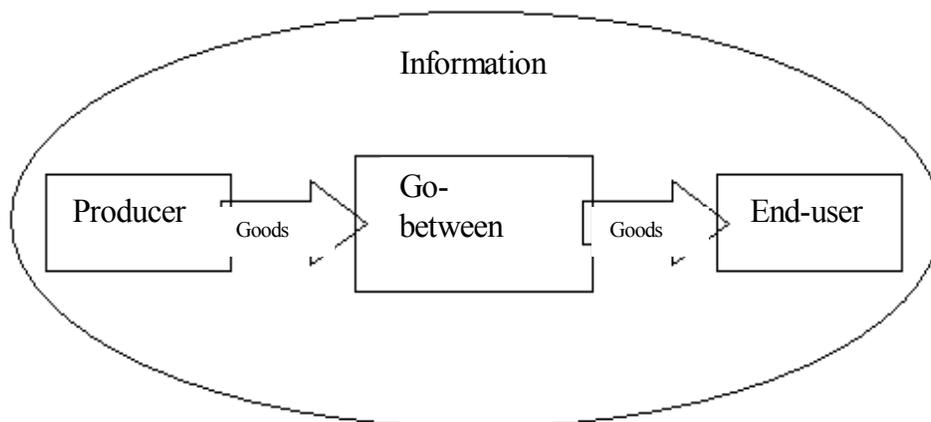
*JEL Codes: L1*

### **Introduction: Commerce enterprise in the supply chain**

The most important reason why production enterprises cooperate profitably with commerce enterprises is the efficiency of the latter in activities in end-user markets.<sup>1</sup>

Obtainment of an efficient access to end users by the production enterprise is the fundamental condition for success of carried out marketing actions. Ware sale is more and more seldom based on their direct supply to consumers. On the path of products commercial go-betweens play an increasing role. They create the so-called distribution chain (channel) (Fig. 1).<sup>1</sup> According to M. Dobrzynski the distribution chain is “a set of material and information resources, which allows for physical movement of raw materials and wares through the logistic system”<sup>2</sup>.

a)



**Fig. no. 1. a) - Distribution chain (channel) producer- end user**

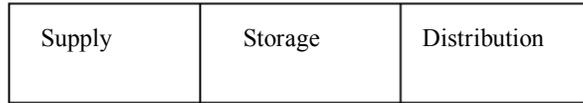
Source: own study

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b)



**Fig. 1 b) - Logistic system of a commerce go-between**

Source: own study

Commercial firms have a better knowledge of market as far as ware supply of consumers is considered in comparison to producers. Therefore they are a very important link in the distribution chain.

In reference to tasks fulfilled by commerce it is easily noticed that control of logistic activities is transferred in the direction from distribution of producers to supply in commerce. It reveals in the phenomenon, that “producers cannot push their wares through the logistic channel, but commerce pulls them, thanks to its knowledge on demand.”<sup>1</sup> It is commerce enterprises, which to a large extent decide of ware offer of their suppliers. Making orders, they are driven mostly by demands, but also by marketing research carried out among potential consumers.

In the distribution channel an important role is played by subsystems responsible for supply and distribution. Time, level and costs of fulfillment of order made by the consumer are directly dependent on them. The efficient supply and distribution management allows also for a more efficient use of storage room. In the literature, these systems are often considered as a single entity – one speaks of marketing logistics or physical distribution.<sup>1</sup>

The importance of marketing logistics is revealed in its taking into account in management strategy of the enterprise. As states M. Christopher, a precise and efficient policy in the field of supply logistics, being the component of the general management strategy, supports fulfillment of market mission of the organization.<sup>1</sup>

Each process of moving the wares from the producer to commercial firm, or further, from the commercial firm to its end-users is accompanied with a flow of other, not necessarily material components. To these the following may be accounted: pieces of information, documents and financial resources. Only the coordinated flow of all these components allows for an efficient fulfillment of actions occurring in the logistic system of the enterprise. Coordination of activities in the supply and distribution processes is a task for logistic management, whose aim is among others “coordination of time relationships in the course of actions covered by the process and rules of use of common resources”<sup>1</sup>.

The basis for activity of a commerce enterprise is participation in the logistic chain. Supply and distribution systems are one of the most important ones from the functional point of view. The efficiency of logistic chain depends on their reliability and robustness. Occurrences of delays or disturbances causes delays in supplying products to end-user.

### **Logistic supply system in commerce enterprises**

The first link in the logistic chain in commerce enterprises is supply. Ware purchase as one of the most fundamental actions carried out in commerce enterprises consists in a number of processes responsible for supplies. One of the fundamental areas of supply logistics is “supporting an efficient supply in all resources necessary for carrying out a continuous and undisturbed economic activity in the enterprise”<sup>1</sup>.

Purchases, made in accordance with observed consumers’ demands and requirements of implemented supply policy, should fulfill criteria: appropriate quantity, kind, time, place and quality. Supply, fulfilling its role at the very beginning of ware traffic in the enterprise is related to the necessity to engage some financial expenses. The way of their use influences directly the financial capital availability in the organization.<sup>1</sup>

Supply logistics is directly related to market and constitutes a compound of distribution logistics of supply firms with the system of storage and distribution of commerce enterprises. Occurrence of disturbances in purchases may cause induction of production standstills - for production enterprises, or selling standstills - for commerce enterprises. In order to organize an efficient supply it is necessary to choose reliable suppliers. One of the fundamental factors to be taken into account during their choice is the ware price and costs of delivery. The economic factor should not be the only criterion for choice of the cooperating entity. Of equal importance are: the quality of services, keeping the schedule, reliability of the enterprise, transport capabilities, position on the market, economic position, as well as the capability to fulfill non-standard orders.<sup>1</sup>

Definition of supply logistics, which does not take into account only the ware traffic but also the role of occurring processes of choice of the suppliers is given as "considered ahead of time set of decisions and actions of the enterprise, which states its policy and strategy in the field of material supply and resulting choice of the most profitable resources and purchase forms of any individual ware "

The increasing number of competing enterprises, acting often on the same markets, is the cause of constant modification of actions taken in order to increase the service level for the consumers. It is related to price drops, increases in service complexity and shortening the time for fulfilling the orders. In order to fulfill these tasks it is necessary to lower the costs of the carried out activity and at the same time to increase the dynamics of actions occurring at the level of supply logistics. Some popular methods to decrease the costs of own activity of commerce enterprises are: lowering the number of possessed stored supplies, shortening time spent on processes in the whole logistic chain, including supply logistics.<sup>1</sup>

D. Dermout and W. Weiss claim that 20-30 % of logistic costs are related to stored reserves within the enterprises. These costs are generated by three factors: frozen capital, costs of storage area and risk related to losing the capability to sell the possessed wares. Taking the actions aimed at lowering the supply level it has to be remembered about the condition, that the enterprise should be able to supply its customers uninterruptedly, but this is related to the necessity to keep supply continuity and schedule. On the other hand, too high supply level may lead to revaluation of wares – as the result of changes occurring with the producers, the unit prices of products from different supplies are different. Apart from purchases, processes oriented at selling influence the quantity of supplies and their efficient handling.<sup>1</sup>

The second factor, which allows for savings in supply logistics is effective use of time. The importance of this factor is considered so seriously, that to its effects, apart from financial profits, the advantages in productivity, quality and even innovation are accounted into its effects. Reasonable time management is at present one of the most important conditions for gaining the advantage over competitors. "Advantage over competitors based on time is one of the best levers, which enable the firms to exist in the market in comparison to traditional competition forms."<sup>1</sup> Introduction into the enterprise of the techniques aimed at better time management, thanks to a faster and cheaper order fulfillment leads to strengthening of ties with consumers<sup>1</sup>.

Paying special attention to time management is visible above all in firms working in just-in-time system. At the basis of the system lies the strive at elimination of logistic actions, whose expenses and costs are not compensated with advantages, thus incurring losses. Optimal organization and mutual coordination of logistic processes occurring both within and outside the enterprise allow for elimination of unnecessary costs. To the fundamental rules of the concept just-in-time the following are accounted: reduction of time of flow of individual logistic processes, simplification of procedures related to their fulfillment, task orientation.<sup>1</sup>

Purchases as well as selling have many common features. Therefore supply logistics uses often methods and tools used commonly in sales marketing in order to fulfill its tasks. Marketing actions oriented at purchases are referred to as supply marketing. As states H. Ch. Pfohl "supply marketing fulfills its task, when thanks to instruments of market research it recollects the supply capabilities

on contemporary markets and with the use of supply policy influences the suppliers in this way, that they would supply the enterprise with required goods".<sup>1</sup> On the other hand to the fundamental activities within the competence of supply marketing K. Ficoń accounts:<sup>1</sup>

- analysis of supply market – carried out from the point of view of raw material demands,
- formulation of offers and supply inquiries,
- choice of supplier – according to criteria chosen earlier,
- leading negotiations,
- preparation of orders,
- entering the purchase deal – as the final stage of negotiations.

In order to influence the suppliers' market the instruments of selling marketing policy are used. Examples of these instruments are:

- policy of shaping the amount of purchases,
- policy of quality shaping,
- price policy,
- selection policy,
- communication policy.

The first three from the aforementioned instruments are treated as fundamental. They determine the variation parameters, according to them the suppliers' market is examined. In the case of quantity it is important to take into account the correct margin of freedom. The selection policy, also called the choice policy, as criteria useful for the choice of a supplier uses pieces of information obtained from fulfillment of quality shaping policy, amount and price policy. The issues related to the delivery service level are also taken into account at this point. The aim of communication policy is to maintain a constant information exchange with cooperators and potential suppliers. Also information and explanation of actions taken by the enterprise aimed at fulfillment of order are covered by communication policy.<sup>1</sup>

Another classification of supply policy instruments is presented by H. Ch. Pfohl. According to him the instruments may be divided into four groups:<sup>1</sup>

- product policy,
- contractation policy (also called condition policy),
- communication policy,
- purchase policy.

To the first group the processes of shaping the product and choice of kind, amount and delivery time for the wares are accounted. These three components: kind, amount and delivery time are sometimes referred to as supply program. Product policy is responsible in supply logistics of commerce enterprises for taking decisions as far as specific features of the order and its amount are considered, as well as the choice of optimal time of their storage. The decisions must be strictly related to occurrences in the sphere of storage and distribution logistics. The idea of contractation policy is to enter deals, which are most profitable from the point of view of the entity, the service is paid to. The following factors are included: product price, transport and storage costs. Thanks to systematic consideration of these factors at the stage of choice of the supplier, the organization is guided by a joint assessment of the offer, considering unit price, choice of kind and form of transport (own, someone else's), as well as the amount of wares in the supplied stock. Making the order, a particular attention is paid to the unit price of the product. Very often some other issues, which could eventually increase it in the future, are neglected at this stage. An example of such actions could be discount actions, which are attractive from the point of view of the price, but they are almost wholesale.

The supplier delivering the ware for sale at a discount price makes however conditions related to the amount of the order. A very interesting from the point of view of price, but too bulky stock of ware causes usually the occurrence of additional costs due e.g. to the necessity to store the

ware and to capital freezing. (Waters D., 2001, s. 550).

Finding the answer to three fundamental, related to supply control, questions: what should be stored, when and in what amount it is necessary to make an order, it is possible to obtain the information about the choice of direction, which should be traced by the contractation policy within the enterprise. This direction will feature the lowest total costs.

The main task of communication policy is to maintain the existing relationships with the suppliers and to enter the new ones. At this stage the explanations of fundamental aims of the supply policy carried out by the enterprise as well as control of suppliers with respect to their fulfillment of signed contracts. The purchase policy covers decision making with respect to the choice of firms and supply roads. Here the questions related to the amount and geographical location of potential suppliers are considered. It has to be stated, that a small number of strictly cooperating, located not far away from each other enterprises intensifies the possibility of optimal use of possessed resources of supply logistics.

Carrying out the economic activity is tied to the risk of failure. One of the methods allowing for gaining market success by the commerce enterprise is making positive changes, either in the field of ware exchange or in management methods. The development of organization apart from the necessity to apply modern solutions from the fields of science and technology demands a constant self-education and supervision of taken actions from the managing staff. There exists a number of different factors influencing the capability of the enterprise to make its individual components more flexible. In order to obtain the requested effects it is necessary to identify their essence and relationships between them. The factors influencing the mastering of logistic management of supply processes may be divided into three fundamental groups:<sup>2</sup>

- organizational dependencies – into this scope the integration of logistic activities, aimed at optimization of logistic management (e.g. material and information flow) as well as breaking the psychological barriers among the employees due to existence of new technologies and management techniques within the organization may be accounted,

- methodologic dependencies – these consider the actions related among others to the ability to choose the optimal method of logistic support from the point of the considered problem (thanks to computer technology it is not necessary to know complex mathematical-statistical relationships existing in a given method, but it suffices to know the necessary input data and to be able to analyze them), here special attention is paid to the necessity of constant self-education of employees,

- calculational dependencies – a proper use of existing material and information resources, in order to organize an efficient management process, requires creation within the enterprise a proper technical-calculational infrastructure. Thanks to it it is possible to optimize logistic processes related to the supply system.

Efficiently organized logistic management processes in commerce enterprises allow for savings in the plane of stored resources – the possibility to decrease the number of stored products and to diminish the frozen assets is gained. Their effect is also the capability of the enterprise to react more flexibly to the customers' needs and the robustness against changing prices with the producers.

### **Logistic distribution system in commerce enterprises**

A commerce enterprise taking part in the distribution channel of production enterprises and a go-between fulfills the aim of its existence selling the products bought earlier. The number of cooperators and the amount of ware-currency exchange allow for determination of its strength in the competitive background. The sales level is the best indicator of the efficiency of marketing actions taken within the organization, showing the level of market acceptance for the possessed ware offer, as well as for their promotion methods. Commerce enterprises availing of the knowledge on the market, where it exists, is able to adjust its offer to the existing needs. The choice of wares, the

amount of possessed resources and sales places are accounted to decision problems for commerce enterprises. As sales are the final effect of economic activity, then considering its profitability issues it is very important to assess proper margins of profit and proposed prices. Each process of ware transfer from the seller to the buyer, apart from money flow, is accompanied with the physical flow of the wares, called physical distribution. The activities related to preparation, processing the orders given by the consumer and giving out the ware to him constitute the process.<sup>2</sup>

Physical distribution is responsible for activities from the following scope:<sup>2</sup>

- getting in touch and keeping in contact with consumers,
- demand forecasting,
- constant control of possessed resources,
- flow and fulfillment of orders,
- after-sales service.

According to S. Abt distribution should be understood as: “analysing different possibilities to make the flow routes for the product on market, making the choice of the most expedient distribution channels, development of cooperation programs between the producers, wholesales sellers and individual buyers, making up efficient procedures of offer, order and supply, minimization of sales costs, use of logistics in order to provide ware supply in proper time, according to the location of buyers”<sup>2</sup>.

Keeping in mind the definition above, the systems of distribution logistics is responsible for actions allowing for actual fulfillment of purchase by the customer. The technological development has led to such a situation, that different firms have in their offer wares of the same property and purpose, differing just in their origin. In such conditions during the purchase process, a particular attention is paid to the quality of logistic services. Very often the activities related to customer service are merged into one single entity with the product, thus a package is being formed. Its attractiveness determines to a large extent the profit level. If it is possible to merge good quality of the proposed ware with a proper and competitive price and satisfactory and possible better than the one offered by the competitors package of associated service, then the commerce enterprise may have justified hopes for the return of the satisfied customer in the future in order to buy another instance of this or another ware. It is characteristic, that obtaining an appropriate level of logistic service, the customer is willing to make a deal although the unit price is a little higher than the one found with competitors. Therefore it has to be stated that from the efficiency of distribution logistics systems, the market percentage gained by the enterprise and the amount of incomes from the purchase are dependent.<sup>2</sup>

The conditions for creation of a highly efficient distribution system are:<sup>2</sup>

- recognition of present and future customers' needs,
- obtainment of good-quality demand forecasts, as the result of use of appropriate methods and tools,
- striving at shortest possible time for order fulfillment,
- fulfillment of conditions enclosed in the deal contracts,
- elimination of factors, which could lead to disturbances in the sales process.

If the supply logistics is the first link of logistic chain in commerce enterprises, the last link is distribution, as mentioned earlier. To its basic task the following may be accounted: transferring ware resources to the receivers, either go-betweens or end users. K. Ficoń referring to J. Penc describes distribution logistics as “an integrated process of planning, organizing and control of ware flow and related information, whose task is to supply appropriate wares (taking into account their kind, amount and quality) to an appropriate destination in proper time at the lowest possible cost”<sup>2</sup>. Between the systems of distribution logistics and supply logistics there exist close relationships, resulting above all from their mutual links to the market. An example may be the dependence of the supply policy of the existing and expected demand level. Taking into account, that system approach requires the necessity to treat processes on a complex scale, as well as that

distribution is accounted to marketing strategies, apart from strict logistic activities, the issues related to the actual place of enterprise activity, such as the market, are accounted to the scope of interest of distribution logistics systems.<sup>2</sup>

As states S. Krawczyk, "the market consists of potential customers having determined demands or wishes, willing and able to fulfill their needs or wishes through the exchange process."<sup>2</sup> The final aim of commerce enterprises is related to their mission ware-currency exchange between the market participants. The effect of the exchange is on one hand gaining wares by one of the parties, on the other one – gaining an appropriate equivalent for it.<sup>2</sup> The abovegiven definition should be extended with ware and information flow processes occurring during the exchange, fulfilled with own sellers' or buyers' resources or with the use of qualified logistic firm.

Independently from the form, in the flow the active part is taken by the logistic distribution system of the supplier, i.e. the production enterprise or a commercial go-between. Taking into account the logistic factor, the definition of exchange may be given as follows: the process occurring between at least two parties, where, with the use of supplier's distribution logistics system and/or beneficiary's supply logistics system, one of the parties receives the requested product, offering instead an equivalent, what is accompanied with information flow. Such an approach to exchange process is to a large extent close to the definition of distribution logistics, mentioned above.

The distribution logistics system is an integrated system, covering all the activities and decisions present during the sales and supply processes. A common error, found in the field of physical distribution, was to consider just transport, instead of the complex process. The result was the choice of the cheapest form of transport, which required very often much more time for ware delivery to the destination. Air transport and express deliveries were often neglected, the influence of this approach on total costs and distribution effects was often neglected. The system approach features the necessity of complex understanding of distribution logistics. The kind of transport is chosen in this context taking into account its influence on total costs, i.e. transport costs, storage costs, order fulfillment costs, costs of potential, but unfulfilled sales transactions.<sup>2</sup>

The necessity of system approach to distribution issues is related to the following factors:

- systematical distribution cost increase
- market development and its constant variegation, thus increasing differentiation of needs, wares, services, etc.
- new technologies in transport and storage economy,
- development of resources and systems for information transfer and processing."<sup>2</sup>

The fundamental task of the distribution system is moving specific products from the places of their production or storage to the customer. It should be done at the lowest possible costs taking into account market requirements and conditions. It is important that the enterprise staff realizes, that even the best product will have no chances for sales if at a given time instant it will not be available physically on the spot and there will not be service-around-sales factors fulfilled and attractive in comparison to the competitors. It means, that particular attention has to be paid to logistics as a factor supporting the actions aimed at improvement of standards of customer service. It may lead to sales increase and related increased profits of the enterprise.<sup>2</sup>

The fundamental aim of distribution is to transfer specific material goods to the buyer. Supply processes are to a large extent dependent on distribution processes fulfilled in the commerce enterprise. Market demands determine the order frequency and amount. The actions occurring during distribution management are treated using the system approach, what allows for their complex understanding.

### **Conclusions**

Commerce enterprises are an important component in the distribution channel of production enterprises. Due to their specific activity, based mainly of ware flow, i.e purchase and quick sales, of particular attention are the efficiently organized supply and distribution logistics systems.

Logistics is not responsible just for the physical ware flow, but in the scope of its interest are basically all the actions before, after and during the ware flow process. The flow of non-material resources of the organization, i.e. information flow, is also accounted. The development of an effective and efficient product flow is not possible without an efficient information flow. The inter-organization and cooperative information exchange is meant here. The investment in modern solutions and information technologies is at present a necessary step in any organization, which wants to play an important role on the market.

For supporting information flow processes by the supply and distribution system, the technology of electronic data exchange (EDI) is used. Information systems using this standard, have become a necessary tool for management of the total logistic system in a short time. This solution has allowed for strengthening business contacts between the cooperating parties, replacing the earlier paper-based and time consuming form with a new one – based on electronics. In the scope of supply and distribution logistics to the most important EDI effects the capability to react faster to market phenomena and buyers' demands is accounted.

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