SYSTEMIC CONCEPT OF COMPANY'S LOGISTICS

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Abstract: in all, currently operating enterprise in the market, both manufacturing and service sectors, there is a logistics system. The basic components of this system are the three main processes such as procurement, production and distribution. In this article we have presented and discussed in detail all of the above processes. In case of distribution were presented costs correlations incurred in connection with the distribution. When the production process is discussed methods for its improvement. And in the process of supply, emphasis is placed on the assessment of purchasers, the choice of location and price calculation.

Keywords: logistics, distribution, production, purchasing.

The approach of a new domain of company's management, the logistical one, imposes the knowledge of own aims and methods of study. But, in order to facilitate the implementation, its main components must be prevalently set forth.
Impelled by the change in the structure of potential clients, suppliers have performed ground changes in their distribution. The institution of the method of "Just times" has imposed special rules even within the company for supply and transfer of products, semi-finished goods and pieces in between workshops, with consequences over suppliers too, whom needed to rethink the distribution logistics depending on clients' new data.

1. Study of the physical distribution logistics

By using the quantitative and qualitative analysis, as well as the comparative theory, it may be noted suppliers have ultimately changed the distribution, even imposing special rules, being triggered by the change in the clients' structure.
The structure of the scientific demarche is:

a) Full recomposition of the physical distribution structures
From a logistical point of view, the physical distribution structures are subject to three types of changes, such as: geographical redistribution of its physical entities; expansion of the physical entities; specialisation of the physical entities.
A stronger integration of the distribution infrastructure into the production operations leads to positive results. For their most important clients, suppliers can therefore suggest the implementation of an advanced storage for responding thusly to the fragmentation

of the supply batches. These storages replace the supplier's warehouse of finished products and that of client's components. The storage shall have a dual role and namely: adjustment role between the supplier's production and client's consumption and repartition role between the client's various consumption points.
For these reasons, the techniques of shared logistics are used, appealing to logistic operators outside the company, suggesting the specialisation of the units of logistic operations as a solution for treating various distribution operations with maximum efficiency, according to the nature of the product, its life and type of operations to be accomplished.

b) A more severe management of logistic costs
Distributors' concern of controlling their logistic costs or clients' desire of better knowing the composition of a franco price trigger the supplying companies to accordingly organise their record. The improvement of the distribution logistics implies a more gradated knowledge of the structure of costs. The interest for each product line is thusly attained, even separately for each product of imputing it the related logistic costs. The resources and means are often common, although their use differs according to each product.
The calculation of the "Direct product profit" of agencies in the great distribution and of the suppliers is significant for attempting to find different solutions from one product to another. An advantage is thusly created, consisting in: obtaining more important orders; increasing the market segment occupied; assigning a larger space in storehouses; arguments for stronger negotiations etc.
The structure and evolution of a distributor's tasks are factors determining a thorough study of the logistic costs elements (tab. 1.). Three more important cost items are basically discovered and namely: general expenses 5%; logistic expenses 20%; expenses with purchased materials 75%.

Table 1. Correlation structure of costs – possibilities of discount

	Structure of costs	***Possibilities of discount***
General expenses	5%	(size) 3
Logistic expenses	20%	(size) 1 Cost elements with great possibilities of short-term discount
Expenses with purchased materials	75%	(size) 2 Cost elements the discount of which has already been broadly reviewed

For this, the calculation of the indicator is necessary: Direct product cost (DPC) and Direct product profit (DPP). The evaluation of the logistic cost to be imputed to a product needs two types of initial databases: the database of the product (weight, size, packaging type, features of the selling unit etc.); database of the distribution (the range of operations, the cost of operations etc.) (fig. 1.).
The model represents a formalisation of all logistic stages the product passes through and is completed by calculating the following DPC indicators – the assembly of logistic costs likely to be affected to a certain segment in the logistic chain, generally the distributor of a product or commercial references; DPP – gross contribution of DPC to the result of a distribution entity, for a product or commercial reference.

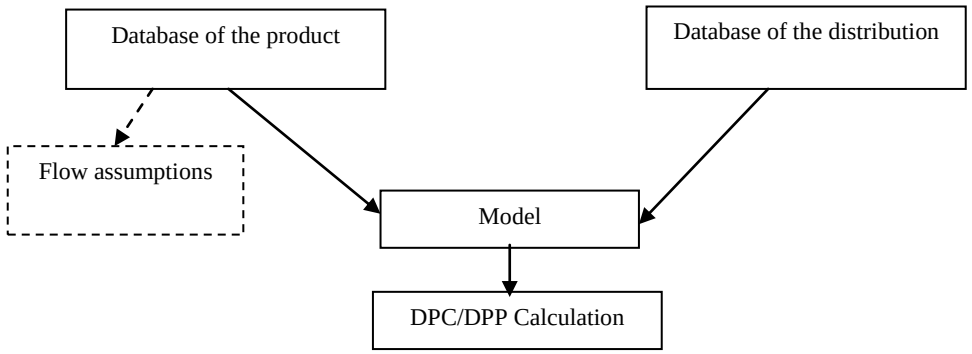

Figure 1. The calculation DPC/DPP.

Depending on the volume of demand and DPP obtained, the commercialised products are classified into four categories: by taking into account the great volume represented by appeal products, the company accepts to bear the logistic costs proportionally risen by the gross margin obtained; at each sold unit, the ideal product generates an important direct large profit; the product contributing to logistic costs sufficiently low for generating an interesting direct profit, but in lower volumes; the product with problems is in too low volumes and implies very high logistic costs (fig. 2).

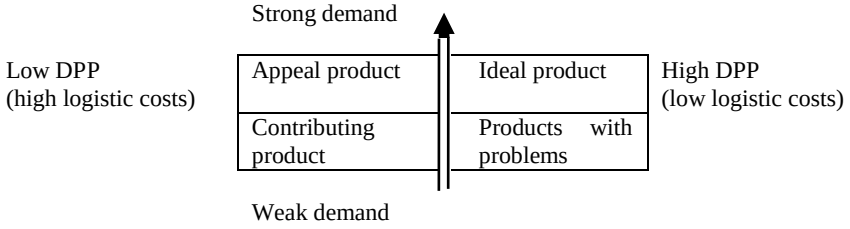

Figure 2. Classification of products by demand/DPP criterion

2. Study of the production logistics

The activities are:

a) Using the method of "Just-in-Time" (Juste-à-Temps)
Used for the first time in Japan, the organisation Juste-à¬-Temps (JAT) aims to satisfy the needs of various participants intervening in the process of making a product available exactly at a time when this is requested. The supply, production or delivery are driven only when de demand for that respective product is signalled.

Obtaining some positive results as consequence of applying the "JAT" method as well as maintaining them in time must be based on a series of actions referring to: maintenance; change of series; location of workshops; conception of the product; quality of the product; relations between the participants to the production-delivery process.
The "JAT" method determines the participation of logistics with full rights to organising the production, which generates certain problems to the flow of materials, components and products, as well as to managing the technological operations.

b) Synchronising the production flows

Synchronisation implies the attempt of a better coordination of production operations in time, with the aim of reducing the response intervals of the production and minimising the stocks materialised into the semi-finished products, that are in standby or in course of being manufactured.

An efficient synchronisation of the flows is obtained by a previous simplification of the flows intra and between workshops and by the good connection of the flows in between them. The simplification actions lead to rethinking the hyper-specialisation of the workshops. For minimising people's movement, cars are not placed in-line anymore, but in "U". All other flows related to the flows of components and products are affected, especially those concerning machines. Their replacement (using a new machine, management, disposal of the old machinery) generates a flow the administration of which is indispensable to the coordinating assembly. The SMED (Single Minute Exchange of Dye) method allows a complex approach of this issue.

On the one hand, the connection of the flows implies an interrelation stronger than that introduced by methods of managing the traditional production, and on the other hand, the reduction of the risk related to the complexity of the flows.

The perfect connection demands the application of a perfectly tuned system of information transmission. It is good to use the Kanban system, which controls the start of manufacture, by means of the labels transmitted from one downstream workshop to an upstream one. When starting to manufacture in the various workshops of the factory, respectively at the supplier, the ideal synchronisation demands to be proceeded so that the components of the product are available at the desired moment.

c) Rethinking the stocks

Rethinking the stocks implies the existence of some key points of the stocks and namely: Their right identification; the attempt of eliminating the stocks before using them; when a stock is justified, this must be maintained; the justification of the existence of stocks right before using them.

The formation of stocks shall be done after setting certain warning indicators, regarding the supply activity, by previously covering a process in three successive stages:

- Stage I – when it is found out there is an area affected by risk or real incertitude. The "absurd" stock is eliminated, meaning the one which does not cover any risk anymore. This is the case of stocks (called hardly saleable stocks) of products or components which do not have any operational or commercial life anymore and survive by generating insurance costs, used surface and management, without any possible income, just as the material stocks formed without any commercial advantage and which can be given up when the supplier may consent to deliveries in smaller and more frequent quantities.
- Stage II – consists in the activity of reducing the risks and uncertainties, where each detected area is the object of a precise study for determining the risk occurring in such an area;
- Stage III – of evaluating the stock level as the cheapest alternative for a situation where other solutions are more expensive at the time of the analysis, the formation and accomplishment of stocks shall only be done after covering the stages previously stipulated, and the compliance of the contents of key points leads to an efficient management of the stock.

3. Study of the purchase and supply logistics

This type of logistics certain:

a) The supplier's logistic audit
The evaluation of a supplier's capacity of dominating its logistics is the more important as the clients' requests in this domain are restrictive and precise.
The selection of such a supplier goes through the homologation process. When the evaluation of the supplier's quality becomes a logistic dimension, this is transformed into a factor for choosing the supplier. It indeed allows the identification of the risk related to the supplier's logistics. A product cannot be obtained anymore only according to the quality and price evaluations. A supplier's logistic evaluation is based on the existence of a questionnaire, containing questions referring to identifying the supplier, the evaluation of supplier's supply logistics, evaluation of the supplier's production logistics, evaluation of the warehouse of finished products – packages – shipment and evaluation of the supplier's distribution logistics (fig. 3.).

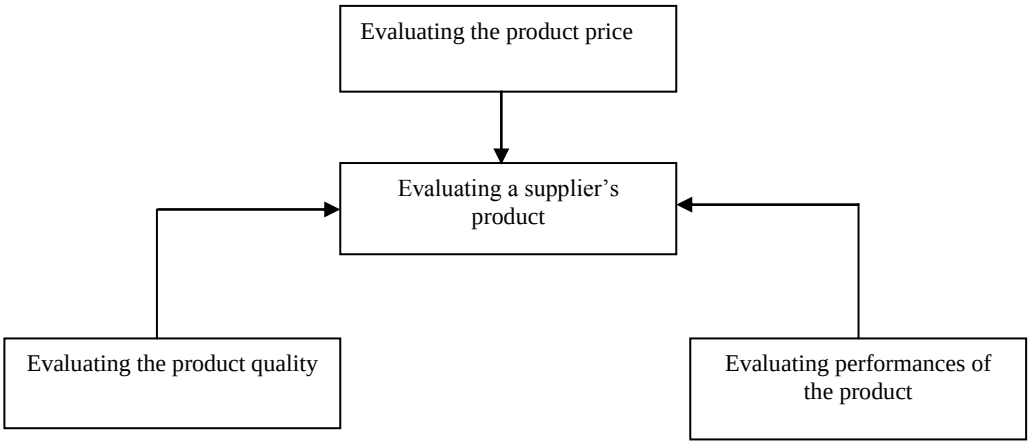

Figure 3. Logistics – the criterion of evaluating a supplier

b) Localising suppliers and transportations for the purchase
The use at a large scale of the franco purchases has limited the logistics in the domain of purchase for supplies. However, there are two phenomena triggering the analyses related to localising suppliers and transportations indicated by purchases: researching the synergy between the physical distribution and supply, appealing more and more to the logistic operators' service, which offers the possibility of rethinking the supply circuits (fig. 4.).

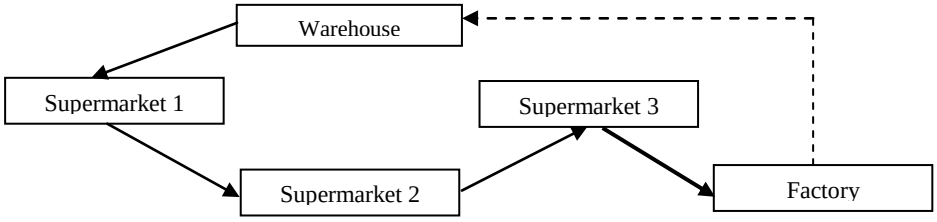

Figure 4. The connection transportation of purchases – transportation of delivery

c) Reviewing prices

The study of the synergy between the supply and distribution reclaims quantified sizes of prices for being able to allow the choice from several possible variants.

These reviews have highlighted in multiple cases that the industrial supplier gained a substantial part of its margins from the transportation operations for sale. Opposite to this tendency, clients require information about two prices: a franco price and a price when exiting the factory.

The comparison of the two prices demands the buyer to have available elements about the transportation of the products, by knowing the exit price.

d) Conditioning and packaging

The ways of handling a supplier's deliveries are multiple, depending on clients' location. The more or less good accomplishment of initial conditioning and packaging acts directly over the internal management costs of the client company.

Or, suppliers do not always pay that much attention to the conditioning and packaging issues, from the point of view of their operational use. Conditioning is the responsibility reserved to marketing. Packaging is best led by production people whom see in it an easy source for reducing prices of recurrence demanded of them for not affecting what seems to be as essential.

The upstream specification of packaging and over-packaging, as much as possible, shall avoid the managements, stock ruptures and further reconditioning, all of which generate "added costs".

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