Chapter 11

The Company's Logistic Activity in the Conditions of Current Globalisation

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Additional information is available at the end of the chapter

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1. Introduction

The globalisation we face nowadays derives from the fact that, by starting from the technological and economical development, a significant number of human activities is situated on such a large scale and scope that they exceeded the national borders within the limits of which the sovereign states exercise their right to govern. The new actors had to cope with the challenge caused by the monopoly-type governance. Multinational corporations, global financial markets, non-governmental organisations as well as criminal organisations and international terrorist networks appeared. Their activity is not covered by international laws which are based on formal agreements between the nation-states, for they have not been able so far to find a common ground for agreements aiming the issue of globalisation.

Among the most invoked causes of the current globalisation, we list the following: *the internet (technology)* which is in many ways the emblem of globalisation because the globalisation of financial markets, the transfer of some very large amounts around the world in just a few seconds would not be possible without this technology, or the organisation of integrated production at trans-national level; *rapid decrease of transportation costs* is due to the very large boom trade and logistic activity have undergone. Thus, the merchandises can be transported much faster; *the end of the Cold War* is also one of the causes of globalisation. If in the conflict between the East and the West the world was divided into two sides which maintained few relationships between them, in 1989/'90 this delimitation known as the "Iron Curtain" collapsed. Those states that belonged to the "Eastern block" opened into the direction of world market, *the global issues* have a particularly important place, especially at consciousness level, an evidence being not just the "One World"-type shops in the industrialised and ultra-developed states. However, the global issues also need an internationalisation of the politics, stimulating the development of a global consciousness. Thus, organisations such as Greenpeace or Amnesty International are committed to certain global themes such as the environment or human rights, becoming "Global Players". Thus,

the beginnings of some new global companies appear clearly; *without liberating* the world trade within GATT, respectively of OMC, this globalisation could not have been really possible. Those who criticise the globalisation such as the ATTAC network increasingly draw the attention on the fact that globalisation is not an inevitable process, but rather a result of deregulation policy of the US started at the end of the Second World War.

The sizes of current globalisation are closely interlinked. Among these, we list the following: *economical size* which refers to the enormous increase of trade and direct investments, the globalisation of financial markets, production integrated at trans-national level, trans-national corporations, local competition; *the size of "environment"* takes into account certain global issues, such as atmospheric warming, the ozone hole or cutting down of rainforests which most impressively illustrate the phenomenon of globalisation because in this case it is certainly a matter about global issues which need a global approach; *the social size* refers to the fact that the world has become a "global village", innovative remote communication networks (chat, e-mail) adding to the traditional communities such as family or neighbourhood, which cannot however replace these traditional communication scopes; *the cultural size* meaning that Hollywood productions can be viewed everywhere around the world, and the "Americanisation" of world culture is an undeniable fact. However, regional and local cultures do not disappear because of this. On the contrary: informing about these cultures is one of the secondary phenomena of globalisation; *the political size* takes into account that politics faces major issues. The globalisation and competition at a local level limits the area of acting for national politics, many issues being able to be solved accordingly only at an international, respectively global level. Therefore, new political forms must be found. In this sense, the European integration is seen as a successful response to the challenges of globalisation. The regional and national politics suffered and still suffers from the delimited and dematerialised economy increasingly practiced at an international and global level.

The consequences of the current globalisation directly affect us all. In this context, a prudent assessment of the opportunities and risks of globalisation plays an important role, distancing us from the current trends of demonisation or rather of glorification of the consequences of this phenomenon.

The following can be listed as consequences of globalisation: *erosion of the national statute* meaning it does not disappear or become useless, as it suggests in many comments, but it erodes. Thus, certain additional levels appear where the issues can be solved – both superior and inferior to the national statute; *the social dumping* refers to the fact that the increase of competition capacity within the global competition at the local level and implicit drop of assumed expenses with social insurance payment is seen as a necessity, especially by the industry, while the unions warn on the danger resulted from the so-called social dumping; *the emphasise of the gap between the poor and the rich* due to the fact that those enterprises with a significant threat potential could threaten to move into "cheaper countries" regarding the workforce. These existed far before having started the discussions about globalisation, but worsened due to globalisation. The movement of those protesting against globalisation try to draw our attention on this and they managed to attract in the meantime a significant number of supporters; "*Global Governance*" aims to (re-)tame the "tiger", meaning the

capitalism released by “globalisation". When the issues start to get an increasingly more global feature, their political solution must also become “global”. In this sense, there are various projects, which inclusively aim to form a global state. For this purpose, the concept of “global governance” was invented, which means: a management of the world without a global leadership system, an internal policy at world level, a policy of the new world order, the politics in the 21st century, a concept opposed to neo-liberalism, a response to globalisation. The global governance aims to fill the resulted void, the regulatory deficit, by cooperating at the international level - the state however keeping its own regulatory functions, but also by forming some new political forms.

The international production, including the production of trans-national companies, branches and other companies linked to the multinational companies, by agreements and alliances, without capital participation has known a strong development. The old scheme of manufacturing in a country and selling in another country has given room to the international manufacturing operations. The technologic progress allows the decomposition and desegregation of production processes. Companies choose the place that meets the most favourable production factors for each of the stages of the production process. Consequently, the export does not represent often the sale of a national product to a foreign buyer, but it results from the different national localisations of those companies that participate in crating the same product. The multinational companies can contribute in stimulating the economic development in the implantation countries, in strengthening their technological abilities, in creating their human resources, in facilitating the access to new markets.

In this context, the logistic functioning of the company with ist other functions essentially includes all activities of the specialized personnel (director of logistic and logistics operators) which aim to offer the customer the necessary product when needed, where needed, in the quantity needed and with a correct price-quality ratio.

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.

2. Systemic concept of company’s logistics

2.1. 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. [1]

The structure of the scientific demarche is:

2.1.1. 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.

2.1.2. 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.

	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

Figure 1. Correlation structure of costs – possibilities of discount

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 (fig. 1.). Three more important cost items are basically

discovered and namely: general expenses 5%; logistic expenses 20%; expenses with purchased materials 75%.

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. 2).

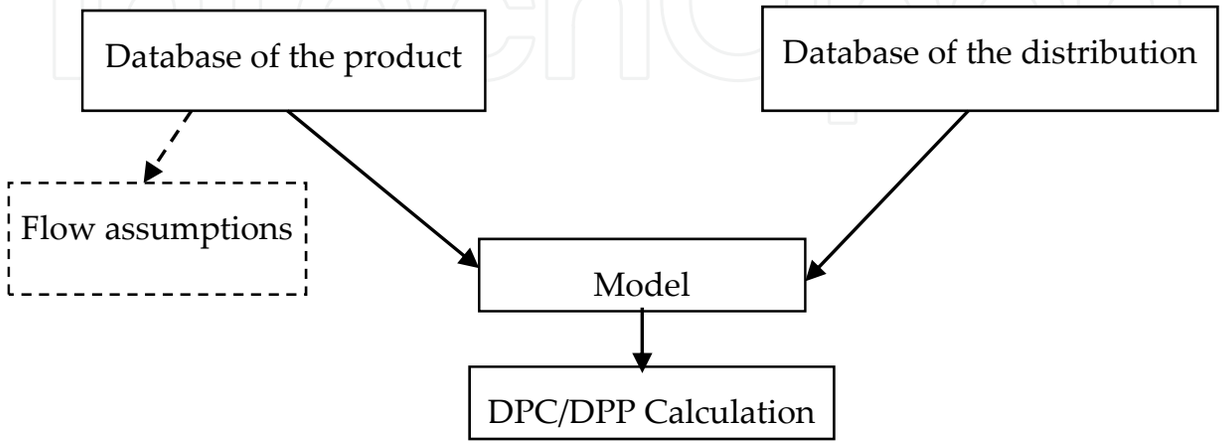

Figure 2. The calculation DPC/DPP

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. [2]

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. 3).

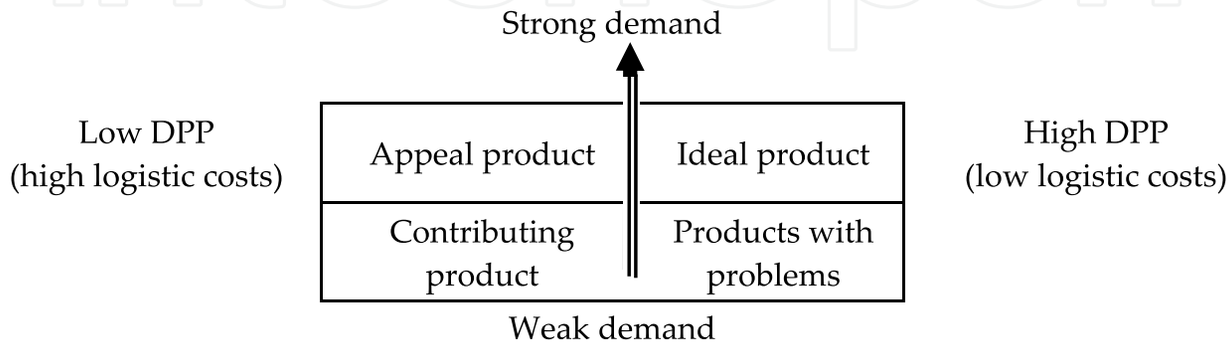

Figure 3. Classification of products by demand/DPP criterion

2.2. Study of the production logistics

The activities are:

2.2.1. 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.

2.2.2. 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.

2.2.3. 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; s**tage 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.

2.3. Study of the purchase and supply logistics

This type of logistics certain

2.3.1. 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. 4.).

2.3.2. 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. [3] 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. 5.).

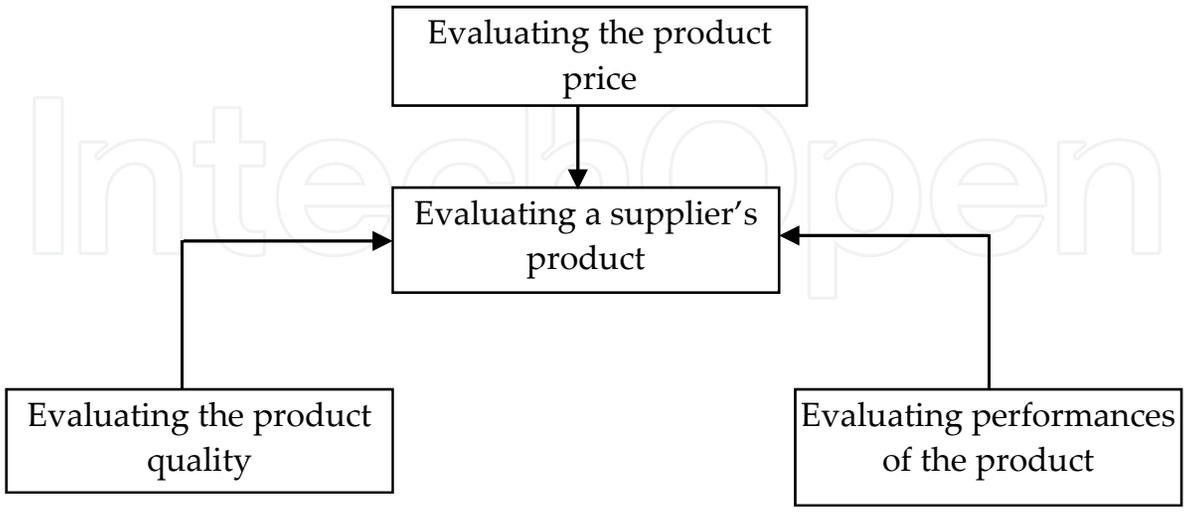

Figure 4. Logistics – the criterion of evaluating a supplier

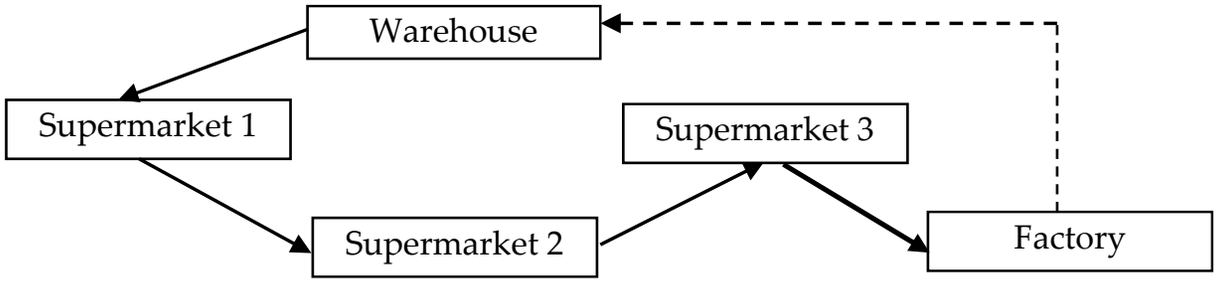

Figure 5. The connection transportation of purchases – transportation of delivery

2.3.3. 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.

2.3.4. 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".

3. Activity of logistics within the company and the costs it occurs

3.1. Level of the company's logistic service

Derived from the orientations of the company's general strategy, logistics focuses its generic orientations in compliance with the aimed performance level. [4] The levels of services must be especially defined by integrating not only the market expectations, but also the performances of the competition (fig. 6). Therefore, **an efficient logistic system is built by starting from a clear definition of its objectives with regard to service**.

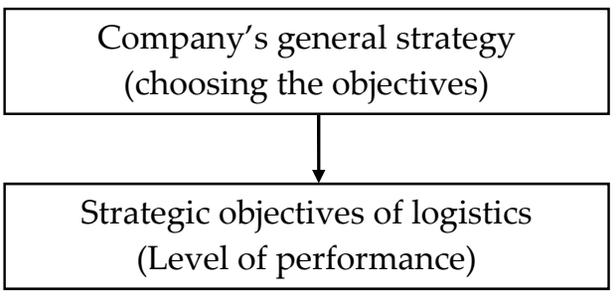

Figure 6. Positioning the logistic aims

For this, it is necessary:

3.1.1. To state the three dimensions of the logistic service

The pertinence of the logistic service levels is as much higher as this gravitates around the exhaustive nomenclature of logistic services. This nomenclature is featured by three dimensions, such as: **dimensioning the service in a state of "continuous flows"** (which covers the assembly of "normal" daily activity, which may be well known in anticipation and imposes engagements referring to framing in terms, reliability, homogeneity of providing services, capacity, availability, compliance of the pursuit documents, control and administration); **dimensioning the service in a state of "random or transitory flows"** (which is actually connected to the activities of unpredictable nature or supply of services which are the task of logistics and are directly integrated to the commercial relation company/client, being applied to the continuous flows as well as for the transitory or random ones, being overlapping the other two dimensions) (fig. 7).

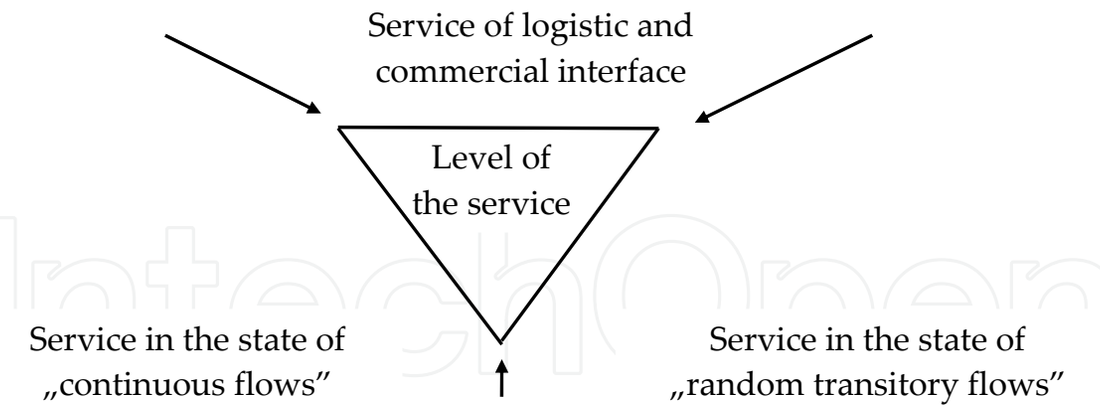

Figure 7. The three dimensions of the logistic service

3.1.2. To set forth the level of the logistic services

In order to successfully accomplish this issue, it is recommended to use, at a large scale, a **questionnaire** for better understanding the clients' expectations. This questionnaire informs on clients' exigencies regarding the level of the service expected of the logistics (fig. 8). The results thusly obtained correspond to the elaboration of the tender book in compliance with that part of the global tender where logistics plays the main role.

This definition of the tender book **Services** is even more necessary as it varies from one activity sector to another, from one family of clients to another. By means of such a tender book, it is necessary to evaluate the service aims and to ensure their dynamic ascendant, meaning the evolution in time.

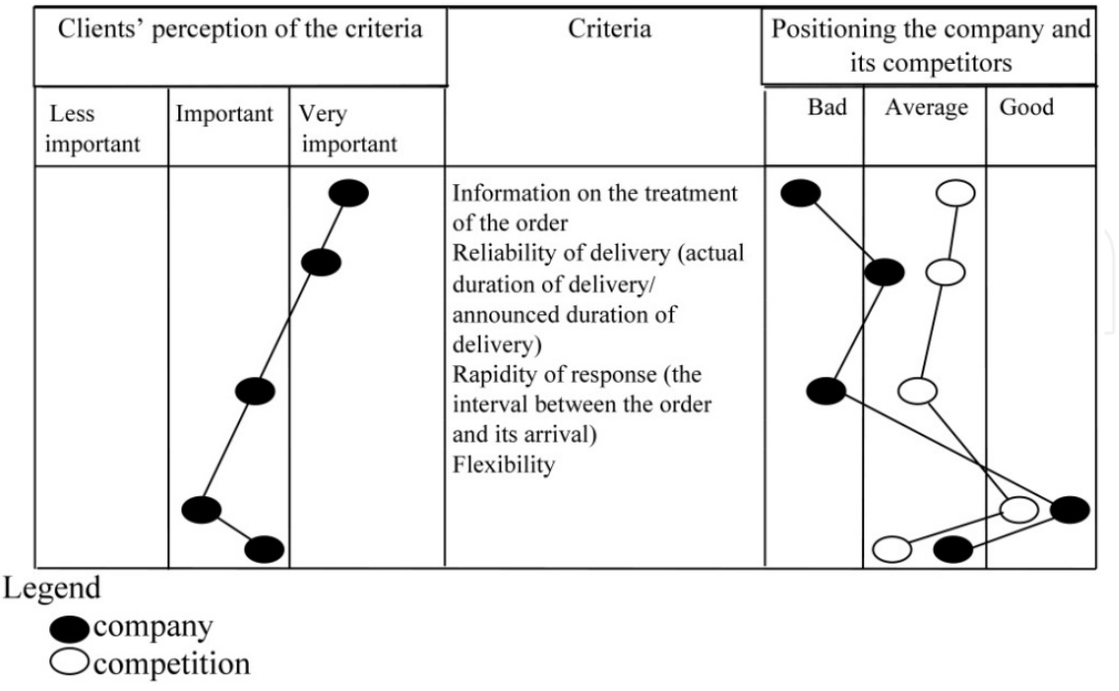

Figure 8. Comparative representation of the service levels

3.1.3. To delimit the objectives of the tender book

A level of services is not susceptible to be reached unless it is interpreted by the company involved in its accomplishment, at all stages. The global level of services suggested to clients arises from the plurality of the objectives by sectors. Once the strategic orientations of the company are fixed, and the logistic ones are determined, the chart of the strategic orientation may be filled in by defining the orientations by logistic subsystems.

3.2. Accomplishing the logistic product

The accomplishment of the "logistic" product consists in making it so effective as to be possible to be integrated into the flow, including the assignation of all components necessary to its further pilotage. The product is imagined not only in its industrial dimension (with preoccupations of intrinsic technology and production technique), but also with a certain logistic dimension.

For these reasons, the following are necessary:

3.2.1. Use of logistics even since the phase of imagining the product

This supposes:

1. An additional diversity of the service brought to clients.

As any dimension of logistics, the logistic support is a producer of services expected by the client. Badly conceived for a sold product or system, this contribution expected by the client influences his/her future decisions of purchase. In its broadest approach, connected to the high technology products, the integrated logistics support affects all flows starting with making the product available, meaning: the means of practically using a product; maintenance; equipments for tests and repairs; technical documentation; supplies of parts; training the operators and maintenance personnel; rejection of products.

2. A profitable source of considerable incomes

The evaluation of their effort needs the introduction of the notion Life Cycle Cost (LCC), meaning the Cost of the Life Cycle or Global Cost:

$$LCC=Cd + Ca + Cu + Cl \quad (1)$$

where:

Cd represents the development cost;

Ca – purchase cost;

Cu – cost of use (operating cost + cost of support);

Cl – cost of dissolution.

Those situations are frequent where the support cost for certain products is at least equal to that of purchase for the client.

The phases of development of a product promptly emphasise the level of support costs that shall be further attached. For a product the use cost of which (essentially support cost) represents 50% of the cost of the life cycle, the diagram in figure 9 shows that practically it is not possible anymore to act on them since the LCC engagement is done in a ratio of 20% at the end of the research phases and of 92% at the time of starting to use that product. It must therefore be anticipated even since the phase of imagining the product driven for decreasing the support costs reaching the desired levels of performance. Such a demarche of integrated logistic support was formalised and used not only for the very technical products or systems (armament, computer etc.), but also for any type of product, including the commercial ones.

The comparison of the logistic costs to the turnover forms a first stage in setting the order of the operational management. [5] The availability or non-availability in this domain is revealing with regard to the company's capacity of identifying and keeping under control the logistic costs or not. If the costs generated by the marketing activity are inductive costs of the demand registered on the market that may be determined or evaluated, the logistic costs are made by the circulation of raw materials and finished products. A response of the marketing induction is found in the induced costs of logistics (fig. 10) Generally, they are costs of physical distribution which are best identified and isolated. Such costs are: previsional costs, sales management costs, supply management costs, warehouse costs, transportation costs, customs costs and fees, costs with the informational logistic system etc.

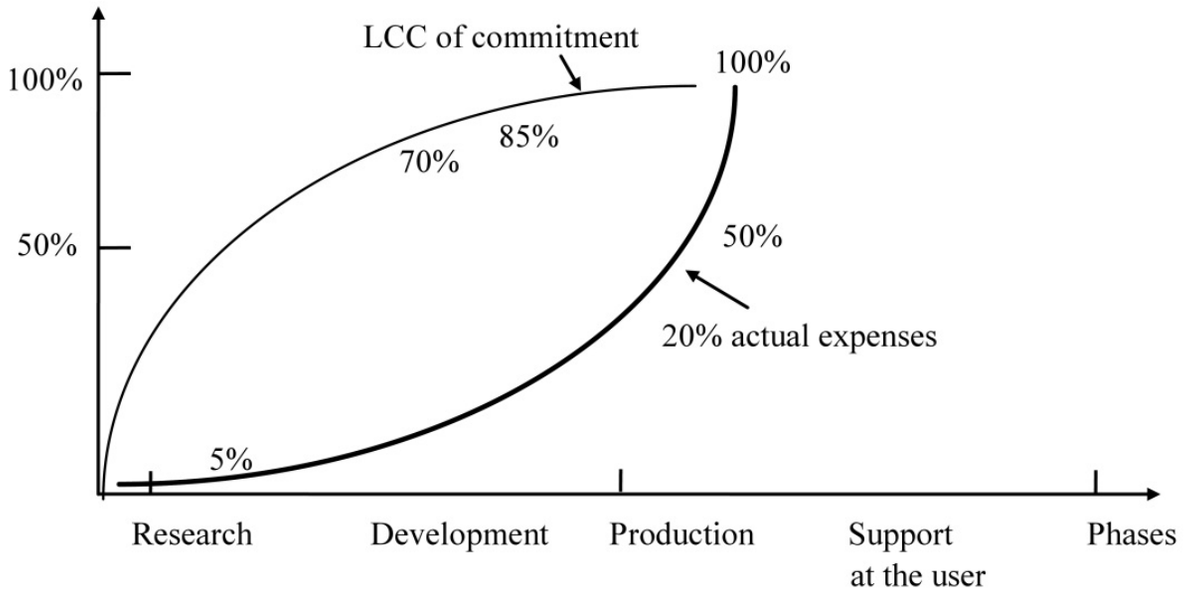

Figure 9. Scheduling the support costs and commitment L.C.C.

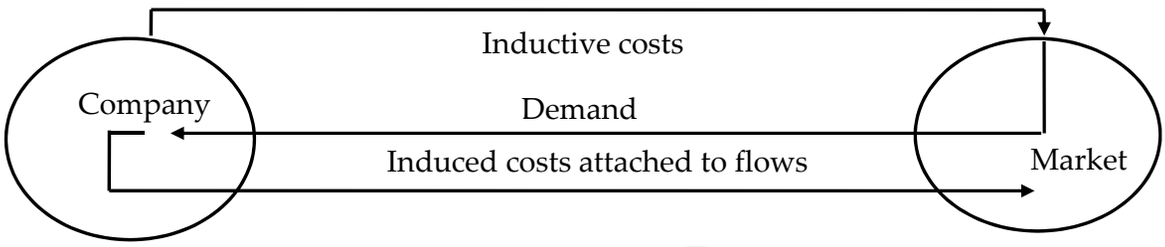

Figure 10. Correlation marketing costs – logistic costs

3.2.2. Implementing the integrated logistic support

It supposes going over three successive phases (fig. 11) and namely:

Phase I: defining the logistical support policies

This refers to defining the logistic support policies and consists in the optimised conception of the product and its support for minimising the related cost for the life cycle at the purchaser.

$$ecc/c = LCC \tag{2}$$

where:
ecc/c represents the global cost at the purchaser.

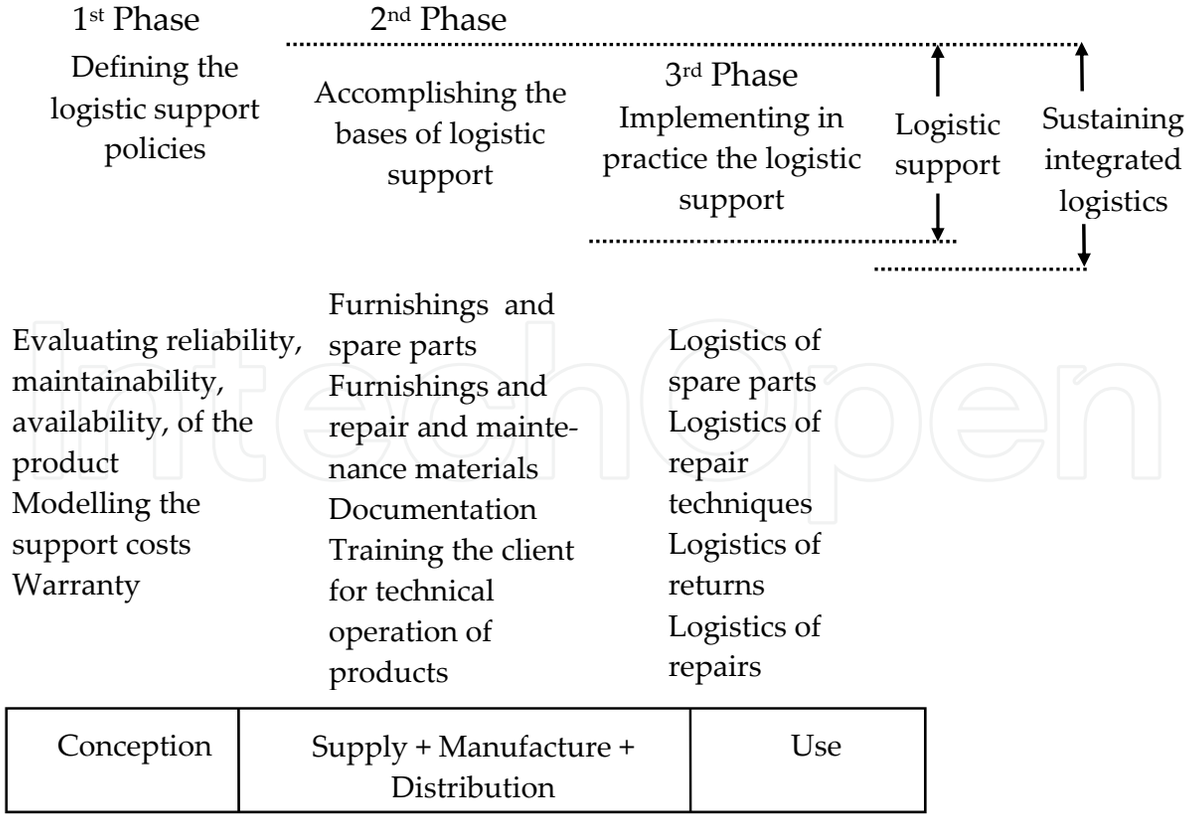

Figure 11. The phases of the integrated logistic support

At this phase, objective such as reliability, manageability and availability are aimed for (fig. 12).

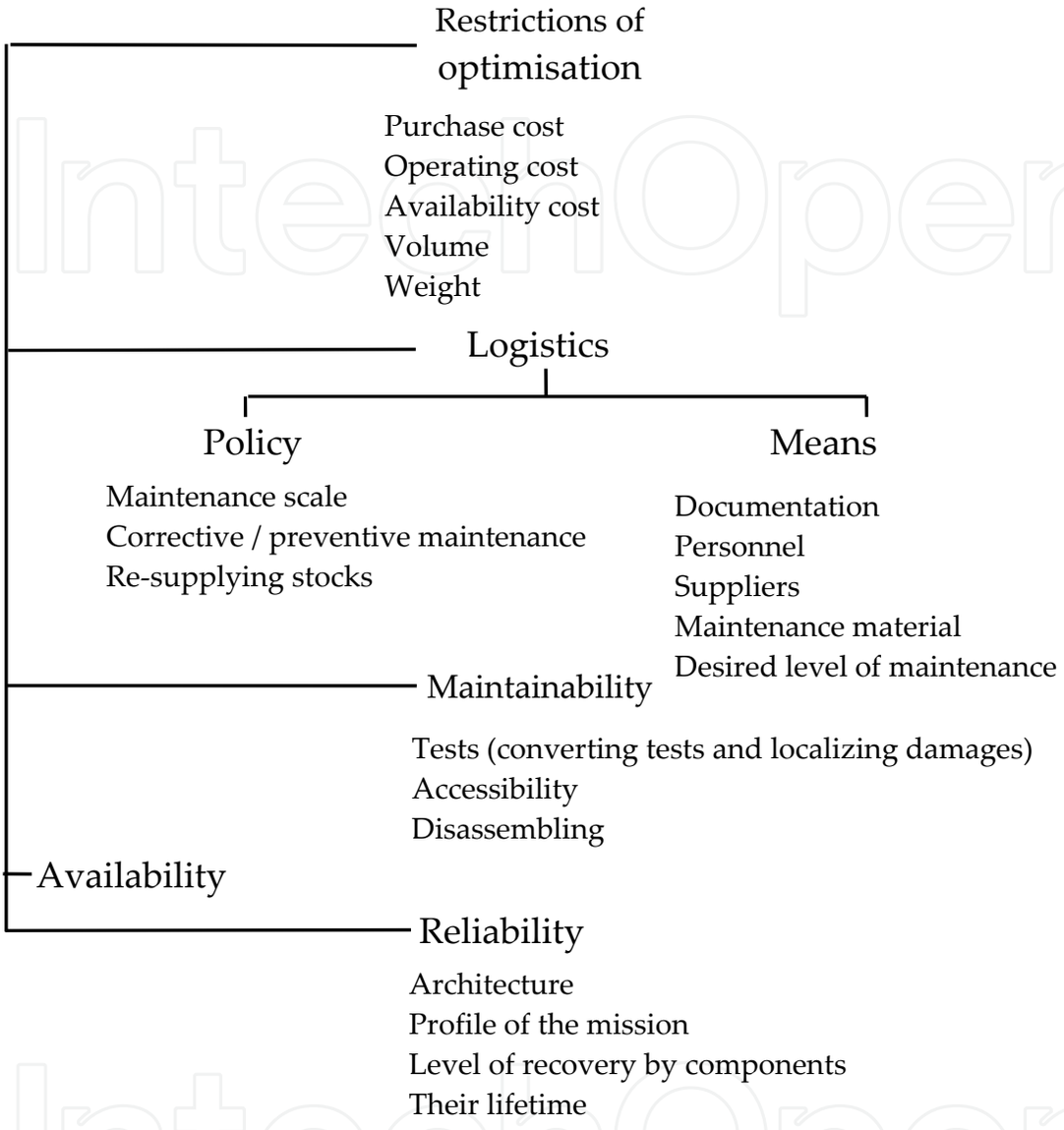

Figure 12. Reliability, manageability, availability in sustaining integrated logistics

Each product must be the object of the specific studies for being able to show clients the evaluations of the performance of logistic support as well as the data referring to the technical performances. Thusly, it may be necessary to stipulate an entire assembly of indicators, such as average time between two damages and average repair time, which must be specified in the purchase contract.

Phase II: accomplishing the logistical supports

This involves material commitments referring to: making spare parts; the design and supply of repair materials; activity of conceiving and drawing up the technical documentations, including technical training of clients.

Phase III: implementing the logistic support in practice

This leads to the occurrence of some logistics attached to the initial logistics of making the product available to clients, meaning: the logistics of spare parts (It is generally treated separately of finished products, it reclaims an organisation and means that are of its own and is featured by the important number of variants, variety of products, service life for over 10 years parts, service exigencies at the client); logistics of the repairer technicians (It must be analysed under two aspects: their availability, meaning repairer technicians are collaborators whom cost relatively much to optimise the stock of spare parts existing at the repairer technicians); logistics of changes**.** (The products involving a systematic organisation of their after-sale support makes some standard replacements of some of their components. For proceeding with them, a logistics of replacing damaged parts must be applied).

3.3. Logistic planning and pilotage

A good planning of the logistic activity implies:

3.3.1. Knowing the logistic families

The product has intrinsic logistic features, such as: physical features; technical features; storage features; order management features; distribution features. (fig. 13).

At a first phase, they are set forth by logistic subsystems, by creating logistic families of physical distribution, of production, supply and after-sale. From the point of view of logistic treatment, they are temporarily aggregated into homogenous logistic units. In supply as well as in distribution, these families are taken into account, in the plan of the transfer operations, which determine transporters to create service tenders differentiated by logistic families, according to the exigencies of the service level of the products.

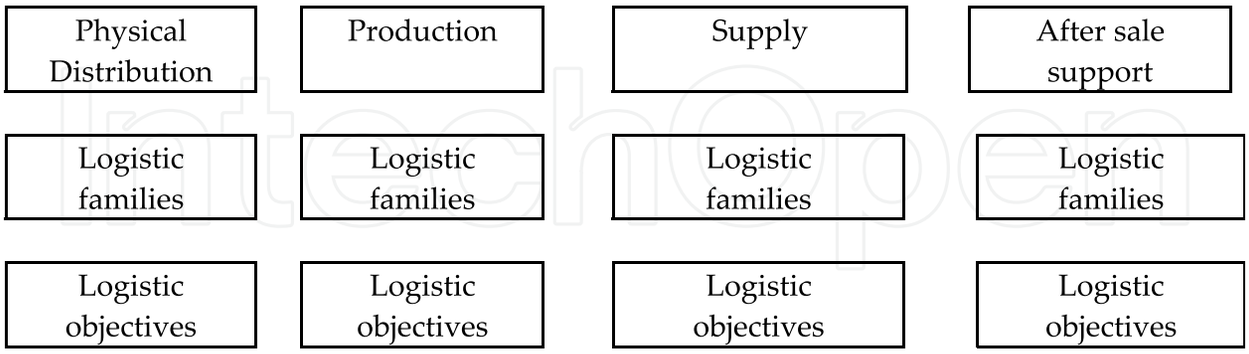

Figure 13. Positioning logistic families in the logistic support

3.3.2. Planning and pilotage

Once the logistic plan is drawn up, it is necessary to correlate it with the pilotage activities, by covering the following stages:

1. **Adjusting the parameters of planning.** Whatever the commercial environment may be where the company evolutes, the conjugated planning of the operations of various logistic subsystems represents the "cupel" where the pertinence of most of the logistic decisions are realised and measured. Planning allows a sequential schedule of the operations in time (fig. 14).
2. **Previewing activities.** It is the essential element of the operational management, and its insufficient evaluation may not offer another possibility of remedy by flexible physical means, capable of adapting to the unexpected changes of the commercial activity. As unexpectedness is very costly, the reliability of the previewing activity must be raised.
3. **Progressive planning.** Aims the composition of the forecasts for the finished products by successive stages. Applying such planning schemes needs two conditions, such as: establishing information with its main commercial partners whom certify this type of circulation, information progressively required between client and its supplier; installing a quasi-contractual management of changes. A client's anticipations, as well as his/her supplier's, are to change in the course of time. There also occurs the possibility for the initial commitments to be eventually changed. For example, they can break-up into three stages: automatic change, negotiated change and enforced change. (fig. 15).
4. **Pilotage.** If planning allows an organisation of logistic flows in time to be anticipated, it does not mean it is sufficient, as it subsists the unexpected.

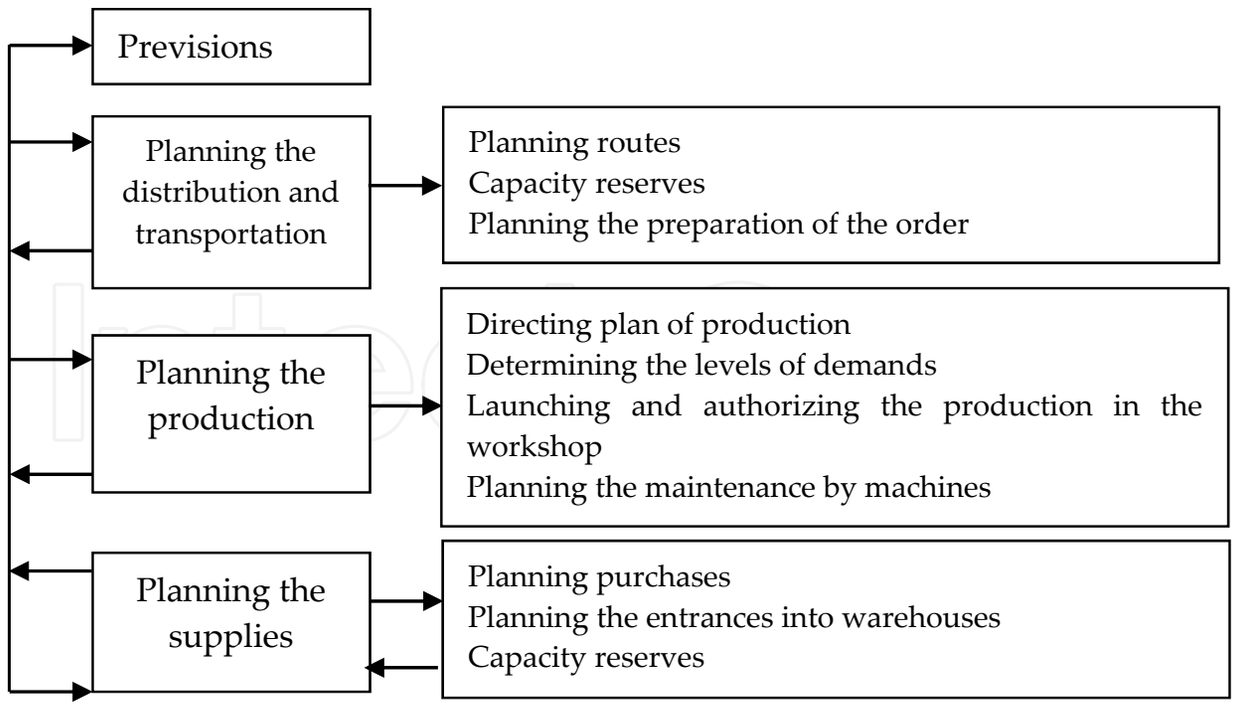

Figure 14. Sequential schedule of the planning operations

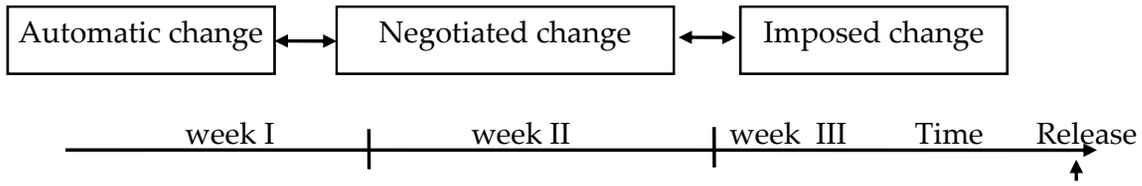

Figure 15. The structure of previsional change in time

The pilotage activity is the one guaranteeing the reactivity and continuous adaptation of the flows to the market demand. For that reason, pilotage is an auxiliary indispensable to planning and needs: the reception of stimuli; interpretation of stimuli; reaction to stimuli. The resolution of pilotage problems makes logistics to turn to some helping tools for making adequate decisions. At a first approach of the issues which the logistic operator is confronted with, it is possible to theoretically deem two big families of basic issues, such as: issues deemed as necessitarian, where the notion of risk is not taken into consideration and which lead to combination issues (delivery term, affecting the product of the means of transport, planning the operations etc.); random issues which integrate, for example, the notion of expecting lead of a length randomly varying in time.

The resolution of the necessitarian issues has benefited by the support of the techniques called by linear programming or dynamic programming, the method of graphs, PERT method etc. Under a certain number of restrictions, most of these methods aim at assigning resources (for example, trucks), by optimising an economical function (e.g.: cost of distribution).

The techniques used for solving the random issues take into account the notion of risk and therefore incertitude based on the variables used (time, costs, capacity, delivery interval etc.). A value is not assigned discreetly anymore to a variable, and a probability function features the attributes of the problem. The resolution is not accomplished anymore by an algorithm, but by a system of equations. The privileged domains of applying the random patterns are all issues including the theory of expectation leads (managing the workshops, managing the loading or unloading points etc.). A compromise must be therefore found out, between the cost of expectations and that of means, as the loading of activities is only known randomly and the notion of stock is similar to the expectation lead.

4. Implementing the logistic study into the company and the costs it occurs

4.1. Activities aiming the accomplishment of an immediate profitability

Such activities are based upon three principles [6], such as: consideration of globalising the operations as work technique, meaning the determination of the priority of the processes in relation to their component operations; intensification of the concerns of coordinating the information with the technological operations; synchronising the immediate individual objectives with the finality of the logistic project (fig. 16).

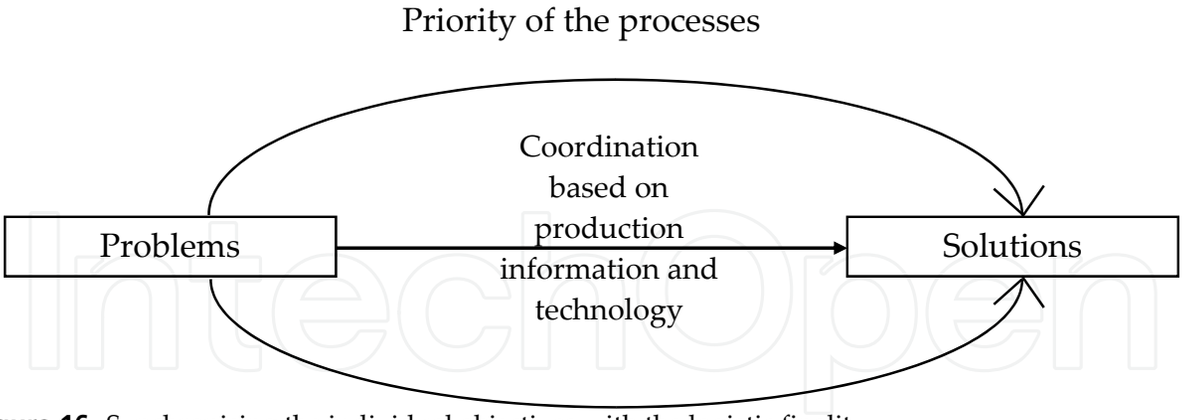

Figure 16. Synchronising the individual objectives with the logistic finality

4.1.1. Priority of the process in relation to the component operations

The study of any operation must take into account its site – first of all – within the process it is part of and therefore within the flow where it belongs to. For accomplishing an efficient logistic change, it is recommended to use some questionnaires, the filling of which shall offer answers to the following questions: Do you always provide the coherence of the operational with the strategic? Do you thoroughly know the representation of the flows? Have you repositioned the functions? Have you performed the necessary upstream and downstream standardisations? Are you prudent enough in framing the informational system of the company? Have you communicated the data you have for drawing up the logistic project?

The answers to such a questionnaire allow the separate analysis of each operation, as well as the analysis of the way of their being within the flow they form.

4.1.2. Coordinating the information with the technological operation

One of the major causes for the occurrence of the primary disfunctionality - which shall be improved and even eliminated by the logistic project - consists in the disaccord between information and technological operation, meaning not harmonising the information with the technological operation which these refer to.

The factors acting over the logistic flow are multiple, and the downstream activities are tributary to the coherence established between the information available at a given moment and the effective accomplishment the flow renders.

4.1.3. Synchronising the individual objectives with the logistic finalities

The objectives that have an individual feature within the company are not always adapted to the specific of the logistic activity. They often ignore the impact they have onto the client's or company’s interest. Another failure occurs when there happens a change in the composition of a full order formed by standardised products, a fact raising special problems for the product programming service.

The resolution of such disfunctionalities supposes the establishment of real objectives, as well as the intensification of the capacity of communication between the compartments belonging to various functions of the company.

4.2. Activities which consider logistics as a means of introducing the progress into the company

The thorough analysis of a logistic system needs its structured representation, which allows the anticipation of the logistic system reaction to the changes it will undergo. Any structured representation supposes the covering of three stages, such as: **1st Stage** has as aim the retention of the logistic variables of the system, the selection of which, as well as observance possibility and measure, lead to the optimum representation of the logistic system; **2nd Stage** consists in creating some patterns of costs attached to each physical variable retained in the previous stage; **3rd Stage** allows the predetermination of the influence of various parameters over the system's behaviour and, therefore, the pattern it represents.

4.2.1. Choosing the logistic variables

In order to choose the logistic variables, it is necessary to know the elements of the logistic system. Let us take into account the example of a central warehouse of finished products charged with supplying the regional warehouses. It is tried to change its configuration. The objective aimed is therefore to decrease of operating costs of the central warehouse. In order to attain this objective, two elements shall be studied – which become logistic variables – such as: flows that shall determine the necessary human and material means of manutention at the entrance as well as at the exit; size of stocks that determine the necessary storage volumes and surfaces. Each of these two elements must be quantified into representative units of the real activity.

4.2.2. Patterns of costs

The patterns of costs consist in representing the cost variables of the logistic operations, by starting from the logistic elements retained as logistic variables.

The transportation costs occurred by supply, indicated in lei/t, can be theoretically represented by the straight line equation:

$$Ct=a + bx \tag{3}$$

In fact, the transportation cost is actually represented by a family of equations, each one of them referring to a certain transported quantity.

Total distribution costs. The total cost of the warehouses within a distribution system is set according to the formula:

$$Canual = a + bQ \tag{4}$$

where: Q represents the annual tonnage distributed by the warehouse.

The same result is obtained by using a linear regression performed over the assembly of the warehouses, by taking into account two coordinates, such as: the quantity sold annually by the warehouse; the operating cost (fig. 17).

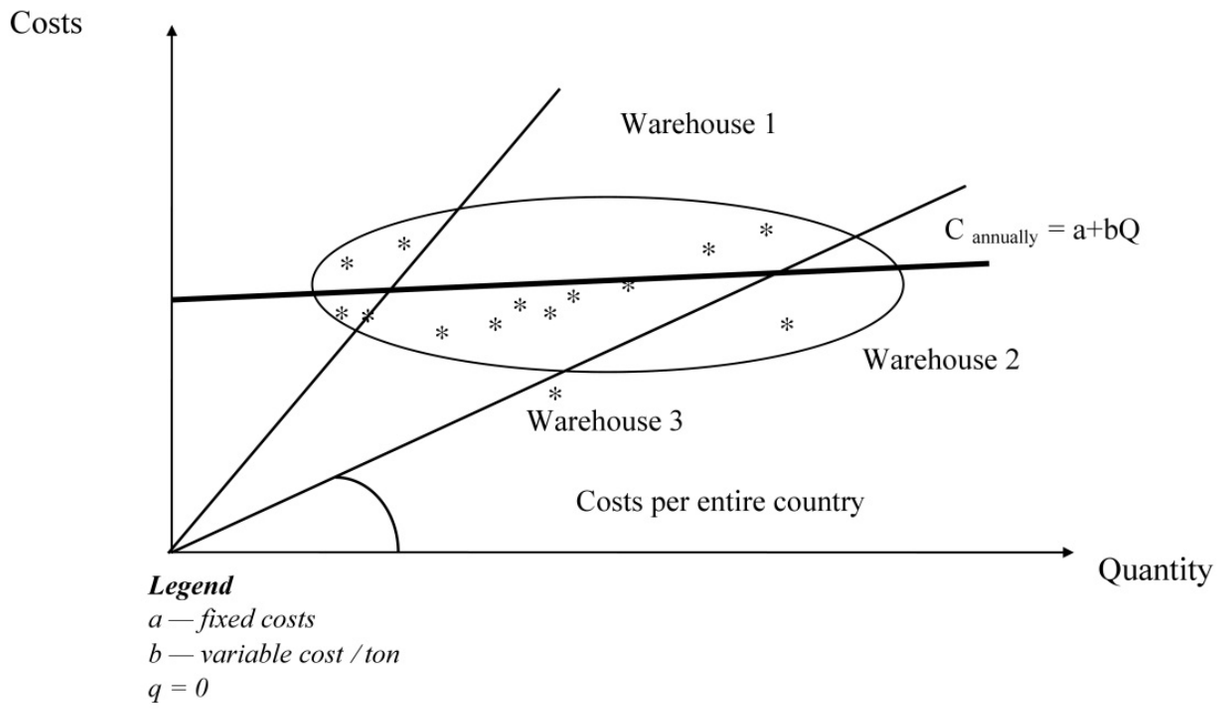

Figure 17. The coordinates of the total distribution costs

The representation in figure no. 17 highlights a class of homogenous warehouses, the global costs of which are approximated by a straight-line and two "abnormal" warehouses. Additionally, it may be observed the simple study of the "cost per ton" is insufficient for grasping the particularities of these warehouses. Therefore, the accomplishment of such patterns of costs becomes an additional means of study and analysis, by highlighting the class of homogenous warehouses and by discovering the abnormal points which a veridical explanation must be found for.

The monthly cost occurred by the operation of a warehouse may be calculated with the formula:

$$C_{monthly} = A + B \bullet Q \tag{5}$$

where: Q represents the tonnage monthly transiting the warehouse.

The determination of this linear pattern supposes the evaluation of two parts: a fixed part (for a given activity level) and a variable part (determined by the managing tasks, administrative management tasks, surfaces, expenses occurred by the structure and system of information).

4.2.3. Influence of representative parameters

The logistic study is influenced by the representative parameters: frequency of deliveries and price of the products. The two parameters are represented by the Histograms of orders, accomplished by volumes or weight. They influence the decision of direct delivery from the factory or through warehouses. The orders to be directly delivered (they have sufficient tonnages or volumes) represent an important part of the total tonnages or volumes, but occupy a relatively small ponderosity in the total order. Warehouses are therefore necessary, the number of which must be set and the position of which must be stipulated.

4.3. Activities occurred by the elaboration of the logistic projects

Any logistic operator must respond to two interlocutors [7]: to a client in the logistic chain, whom he/she cannot respond to unless they have a certain degree of autonomy and only within the logistic regulations and procedures established and within the capacities they have; to a certain hierarchic position that must rethink its role for keeping the autonomies and for focusing the actions over determining the capacities, formation, control, management, by exceptions and periodical recurrences of the major, strategic options. Such an evolution is attained only by the logistic demarche, which fundamentally changes the connections between various agents, the ratios with the hierarchical echelons and modalities of exchanging information.

Any logistic project comprises four phases, such as: a phase for evaluating the performance level aimed for; a phase for evaluating the current performance level; a phase for defining the various scenarios of evolution; a phase for planning in time the chosen scenario (fig 18).

The logistic projects understood as an assembly of logistic demarches have an impact over the structure as well as over the company's culture. The structural changes have led to modifying the contents of some positions in the company and to creating new rules in the dialogue and exchanges with the logistic suppliers and providers. The thorough cultural changes of structures are those performed on time. They keep the role as engine of logistics and encumber the occurrence of some restrictions at a given time, in the way of applying certain competitive logistics in practice.

5. The use of persuasive communication in logistic negociation

5.1. Purpose and stakes of the logistic negotiation

The object of the logistic negotiation is to seek through communication the convenient proportion between cost and quality. Within it, as well as throughout the logistic problem solving, there can be, as M. Hülsmann and K. Windt show [6], two types of communication: "direct communication", "indirect communication". The specificity of the logistic communication is the result of the main object of interaction: deciding the price through a debate, contributions, performances, opinions or conduct in relation to the quality of a product.

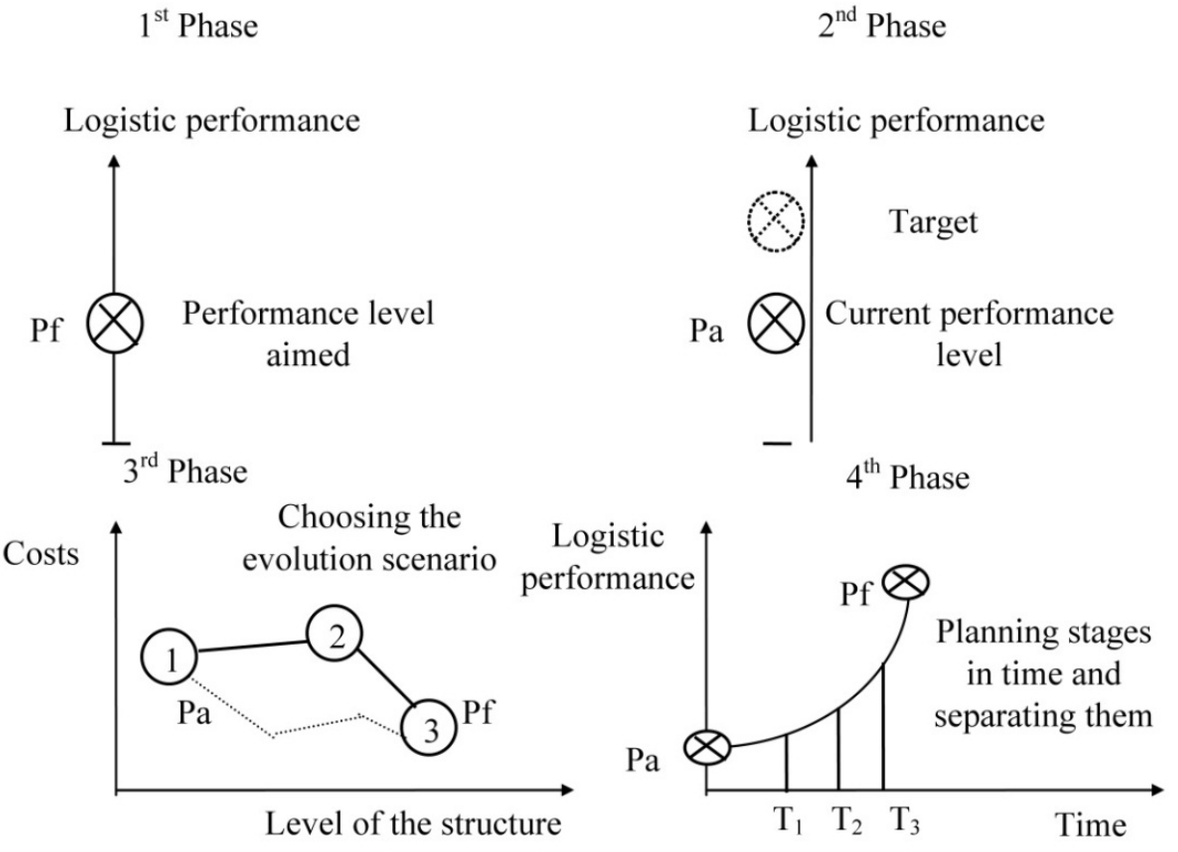

Figure 18. The phases of the logistic project (a, b)

Purchaser and provider debate the elements of cost and quality. In negotiation, the rarest case is that of providing a fair price for a legitimate quality. Usually, the negotiation experts considered that the major stake of the purchaser is to offer a lower price for a fair quality: that is to persuade the supplier that that quality is not worth the basic price. The purchaser is motivated to accept a lower price for fair quality, because he knows that the supplier will almost always require a higher price than the right one for the offered quality. Therefore, the purchaser and the supplier are prepared to communicate persuasively: to persuade or be persuaded.

The negotiatiable-logistic communication has specific stakes. First, to develop a negotiatiable relationship that allows the approach and the debate of a structure of logistic results. Then to implement the strategies capable of leading to the goals achievement. In this sense, the negotiatiable phenomenon is also governed by persuasive stakes. Beyond knowing and explaining the negotiatiable behavior of the dialogue partner, informative targets fall besides stakes. Since in any situation of communication the recipient is the one leading the destinator's reasoning, we can define two types of message stakes: taking into account the recipient and the conviction or, in the worst case scenario, the persuasion of him in the direction of insuring the achieving of the personal aims.

The negotiatiable logistic discourse dresses up the economic and persuasive reasons in an ambiguous vocabulary and entails them in persuasive strategies-maneuvers. When the

stakes are factic (triggering acts of purchase, for instance), they will rely on the springs of tactical persuasion and will leave in the background the strategic purposes.

5.2. Strategies and stratagems, tactics and maneuvers of logistic negotiation

Logistic negotiation allocates much of the effort on achieving the practical purpose: obtaining a favorable price compared to the quality level.

Cogitationally speaking, negotiation is a discursive structure focused on deliberate operations. The operational thinking is a strategic thinking, because "in all forms of human interaction is at stake a certain degree of strategy and tactics." Satisfying the interests of the negotiating partners is by using a range of strategies and tactics.

In our opinion, in terms of discursive structures based on conviction (like dialogue) we deal with operations, actions, tactics and strategies. Equivalent in terms of discursive structures based on persuasion (like negotiation) is: moves, tricks, maneuvers and stratagems. Similar to strategies, stratagems may be: direct or indirect, cooperative or conflictual. But unlike the first, the latter is not based on conviction, but on persuasion, on operations such as: lies, seduction, fiction and myth. The persuasive strategies control maneuvers and tricks in which prevails one or the other of the fundamental persuasive operations of pre-qualifying as a win-win negotiation for anyone involved in the process of negotiation, is a meta-maneuver, that is a maneuver projecting a reassuring negotiatiable demarche, an essential condition for developing the persuasive maneuvers. Because, the fact that the overwhelming majority of studies on negotiation focuses on techniques, tactics, stratagems and negotiatiable maneuvers proves that negotiation is mainly a persuasive construction.

Mostly negotiation means controlling through maneuvers. Considering stratagems as persuasive strategies, bringing into the analysis the classification of the latter and comparing the two above mentioned taxonomic approaches, reveals that there are authors who do not take into account the existence of stratagems and that some of the so-called stratagems of some authors are actually maneuvers.

If stratagems include projections of conduct in achieving the purpose, maneuvers are precise steps in the influencing of the elements of the negotiatiable system or interventions during the negotiation process. Maneuvers in the negotiatiable process can be considered, separately examined, the constituting methods of the control stratagem. There are 6 weapons of persuasion: reciprocity (reciprocation), consistency (consistency), social validation (social validation), authority (authority), the person liking (liking) "insufficiency" (scarcity).

In the case of logistic negotiation the operation of the six weapons (reciprocity, consistency, social validation, authority, liking, scarcity) of persuasion can be illustrated like this: reciprocity (ie, I will buy from you, as you make a discount for me), consistency (I will buy from you, for I usually do so), social validation (I will buy from you, because you have good products and you are appreciated), authority (I will buy from you because, in this respect, I was advised by an expert), pleasure (I will buy from you because I like you as a person and

as a supplier), "scarcity" (I will buy from you for, due to the good quality products, they do not run out). He considers that these "weapons" is each and everyone a persuasive maneuver [8].

The most commonly used maneuvers of persuasive communication in the logistic negotiation are "door in the face" and "low balling". According to some authors, persuasion is an area "adjacent" to social influence; in the area of interpersonal influence there are "techniques" with manipulative qualities. These "techniques" (foot in the door, the door in the face, low ball, etc.) with "manipulative qualities" should more accurately be called standard forms of interpersonal maneuvers. Calling them one time "techniques" and then "strategies", Joule and Beauvois consider that foot in the door, the door in the face and priming are, generically, "the daily manipulations."

5.3. Used maneuvers of persuasive communication in the logistic negotiation

Persuasive maneuver *door in the face* starts with a strikingly high cost compared to quality. By contrast, *low-balling - the cost extremely profitable over the quality* (also known as priming) is based on a highly affordable cost in relation to quality. The idea behind the low ball type handling is that "balls thrown at low height are easier to catch." The priming shows an obvious configurational similarity with the "foot in the door." In these forms of persuasion, the one making the maneuver seeks to obtain compliance in relation to an application, obtaining the prior approval of an application less expensive The similarity of the manipulative message that goes up to the limit that the “foot in the door” first gets a conformation to a minor request, but keeping hidden the real demand, while priming performs a conformation to a real demand, but keeping hidden the costs. The both maneuvers are insidious, "foot in the door" hides a greater demand and priming hides the costs subsidiary to the request acceptance.

The majority of primings occur in the commercial. The seller leads the client to make a purchasing decision hiding him some inconvenience, or throwing in his face fictitious advantages. The advertising and publicity industry uses this strategy. It is worth mentioning here the example of car dealers, who after the client has accepted the price, notify him that the price does not include a range of accessories and, if they are desired, an additional cost must be paid.

The priming message involves two decisions: the first decision is taken knowing the "listed" or presented costs; the second must be taken when actual costs are known.

For engaging in making the first decision, the subject is seduced by appearance, deceived by the price. In making the second decision "lying" occurs: now he is informed that the real price is higher. People tend to be consistent with them and to maintain a decision. Moreover, they insist on the decision coming after the initial decision. In priming case we are dealing with an inertial persevering in a decision whose validity has been questioned even by the fact that a second decision is required to be taken. Many types of priming begin with an innocent and insignificant question to which the manipulated answers, without experiencing

any pressure, "yes": "Would you do me a small favor?" Once accepted the undertaking, the next step of the priming completion is already made. The manipulated may be required an expensive service which, if the request had been made without the little pace, he would have refused to do it. The primed individual has the impression that he would not be able to reverse his “yes” original decision after seeing the inconveniences entailed by his affirmative answer. Saved by priming are the one who have the lucidity to make two different decisions, and not two decisions of which the second would appear as required in relation to the first.

Priming and other forms of interpersonal maneuver could be avoided by isolating the two decisions required by the manipulative message launched in a behavioral manipulative event. Classical priming means that "lie" refers not to the product (this is real and true), but to the cost: compared to the initial seductive cost, the real cost in the second sequence is higher. The actual product is displayed with two prices: one initial seductive price and the second a lying price. When the product does not really exist, then we are dealing with bait. Most common example is the shop window or advertising. Let say very cheap and quality shoes are displayed. The seduced enters the store decided to buy. He is told that, in fact, the pair in the window is the only one left and that it has defects, but, if the defective pair is not wanted for purchase, in stock there are shoes as good as those. The manipulated sees stock shoes, likes them and wants to buy them, then he finds out that they are double the cost of the window shoes: far more than he expected. Most likely, entered in the store to buy "those" cheap shoes, the manipulated will come out with "other" shoes: expensive ones. Seduction is followed by a lie.

The classic priming is about a real product; authentic and available, the bait is about a real product, tainted or unavailable, or tainted and unavailable. With priming you get the object to another price, with bait you get other object than the one you have wanted.

The priming mechanism works as the manipulated feels compelled inertially to complet an undertaking entailed by his first decision To the manipulator’s progressive demands, the manipulated inadequately answers with a inertial decision. To the manipulator’s low ball, the manipulated responds with an answer of "clinging" to an initial decision. The perseveration in the initial decision has been also called the escalation of commitment.

6. Company’s non-logistics – a “Logidram” for the company

6.1. The client-supplier

This conflict knows a special acuity, illustrated under various domains, such as: managing the transfers from the supplier to clients, managing packages, contribution to increasing quality etc.

The merchandisers upstream and downstream of the manufacturer [9] have today the increasing tendency of initiating new measures, aiming their suppliers or clients when they see the stocks of products are increasing.

Among these measures, the most important ones are:

6.1.1. Setting forth a new way of exchange and negotiation between manufacturers and distributors.

Logistics forms a special investigation area as interface between the upstream and downstream, in a commercial exchange process. If at a first stage it acts internally, the client slightly realises that the most interesting sources of improving the management of its operations directly involve its supplier. To this effect, it has two ways available: to work individually, by imposing additional restrictions even in special situations, with the risk of exacerbating the multiple areas of conflicts (a way frequently followed) and to collectively approach issues, meaning to evaluate the advantages obtained from their resolution for being further shared (a more difficult way to follow, as it requests a good prior domination of logistics internally, and the capacity of initiating negotiations with the suppliers or clients shall exceed the only dimension quality – price).

The are numerous conflicts between the manufacturer and wholesaler, as their interests are divergent. By means of logistics, the manufacturer researches downstream the possibility: of keeping the control over the formation of its costs and thusly ensuring the real competitiveness by the prices of products at final client; of choosing its distribution channels for keeping control over its marketing mixture (choosing the product, its price, distribution and promotion); of preserving a complete image over the end client, thusly orientating its activity over the real consumption; of adding new services attached to its products, accomplishing additional operations with high added value.

On the contrary, the distributor has multiple interests which determine him/her to wish to have direct responsibility of the logistical upstream or downstream operations. That is why he/she wants to: accomplish important economies thanks to the orders that become mass orders, as such an order to the supplying factory is susceptible of commercial conditions clearly better than those obtained by various smaller orders besides the regional warehouses; simultaneous optimisation of supplying transportations (from the producers) and distribution transportations (to clients); totally controlling its extremely sensitive supplies, as its logic is to obtain the highest speed of rotating current assets and a minimum stock.

6.1.2. The increase of the distributors' importance in the global logistic process in the case of the great distribution.

The example of the convenience products [10] distributed by the great distribution, featured by the risk logistics represents to the interface between the producers and distributors is eloquent to this effect. By the beginning of the '90's, manufacturers dominated the pilotage of the physical distribution operations in the sector of the convenience products, Today, distributors have developed the distribution channel, by trying to ensure the logistical domination of the transport and storage operations. Thusly, producers must now deliver

mainly to the distributors' platforms, when their products are not directly taken from the producer by distributors' means of transport.

6.1.3. organising the logistical arbitrage between the client and supplier in the industrial domain.

Let us take into consideration the manufacturers with a process in continuous flow, which needs to receive daily a delivery from each of its suppliers of raw materials and material. While the manufacturer wants to regroup its transports and homogenise them, its suppliers do not succeed to coordinate each other. Dispersed, and with specific internal preoccupations, suppliers have an inefficient inter-company communicating and coordinating manner. In order to develop this situation, the beneficiary requests the prices of transport put into practice by its suppliers and tries to personally take care of the transportation, after gathering the necessary information, by using a regrouping centre of the sales;

6.2. The conflicts connected to the logistical operators' activity

For a long time, logistics has been considered a juxtaposition of the operational activities. Since the beginning of the '80's, it has been structured at an economical scale in a profession composed by various skills (specialists in stocks, in storing etc.). They are qualified as logistical operators or logistical service providers. Their development is basically connected to the tendency existing in companies of entrusting the performance of some logistical operations to some public specialists. This is why the external logistical operators' recruitment process raises multiple problems in a context of logistical providers' new offers, the companies have started asking a series of questions regarding the request for these providers' services, and namely: What will be the social impact in the (hiring) company of using some external logistical operators? Who are these providers and how are the relations with them managed? What are the implications of this policy in managing the activities of the company hiring them? What will be the implication of the provider's operational system into that of the company?

The answers to these questions are the one that shall determine mostly the decision of turning to logistic operators. It must be insisted upon the fact: concerning the working climate, there shall be created the quality of the original context of integrating the logistic operator into the beneficiary company. The resolution of such conflicts leads to developing the logistics, which has as aim: the improvement of the economical profitability, by a better management of a domain which greatly contributes to the costs of investments; of mediating areas of conflict needlessly consuming resources; of formalising a management instrument, meaning a tool suiting the parameters of the structure; of widening the vision and measure of performance.

The existence of an inadequate logistics determines the deterioration of the economical indicators connected to the logistical activity, mainly the logistical costs (which must be identified and kept under control) and the size of the logistical investments more or less concentrated (the increase of which must be controlled). The logistical costs fluctuate

between 3% and 10% of the turnover for the industrial companies and may reach 15% for those specialised in the distribution of products.

7. The Logitest – A tool for assessing the company's logistical competence

Understanding the new concept – that of logistics – involves certain difficulties either because reconsidering the contents causes undesired side effects or simply because implementing this thinking makes it difficult to draw the borders of a new concept. Innovators are always willing to face the reality of their new centre of interest as quickly as possible, and the old ones on the matter are curious to face each other and enrich their thinking. [11]

In order to satisfy both categories, the **Logitest** may be introduced as work tool which proposes 16 questions allowing it to have access to the core of logistic thinking. It is a small multiple choice questionnaire, where just one variant is correct.

7.1. Structure of the Logitest

1. Responsibility of logistics in terms of objectives consists of:
a. Manufacturing the products at the lowest cost, eliminating almost all stocks
b. Balancing the workload by modulating the service level depending on the fluctuation of sales
c. Maximising the service provided to the client
d. Targeting a service level with minimum acquisition cost.

2. The evolution tendencies of the industrial logistical systems over the last 15 years are featured by one of the following variants:
a. Industrial company's increased integration and centralisation of its physical activities and commercial distribution
b. Full separation of production activities from distribution and sales
c. Sub-treating or decentralising the downstream production activities and their possession due to the informational systems
d. Meeting the industrial productivity goals.

3. What does LIS mean?
a. Logistics Information System
b. Internal Logistics Strategy
c. Integrated Logistics Support
d. Interconnected Logistics Position (*Site Logistique Interconnectée*) .

4. The production upon receipt of order generally involves:
a. The existence of stocks of finished products
b. The systematic launch of manufacturing batches in economic quantity
c. Manufacturing times shorter than the delivery interval / period
d. A very high productivity.

5. The annual interest rate is 10%. The volume of stocks in Logistik Company is equivalent to a turnover in a month. The management is committed to reduce their level by 50%. What profit can be expected (in percent) of the turnover?
a. Approximately 0.5%
b. Approximately 1.5%
c. Approximately 3%
d. Approximately 5%

6. If the machine loading time is reduced by 4 times, then:
a. The size of the manufacturing batches is reduced twice
b. The size of the manufacturing batches is increased twice
c. The size of the manufacturing batches is decreased by four times
d. The size of the manufacturing batches is increased by four times

7. Is MRP:
a. A pattern for managing the stocks?
b. A pattern for production management inquiring about the bottleneck areas?
c. A pattern for production management based on management of stocks?
d. A pattern for optimal management of using the fleet of machine-tools?

8. Client's "Order Penetration Point" in the company is:
a. The entity of the commercial service which it addresses the order to and which is responsible to track it
b. The starting point from where a product is affected to a certain customer
c. The point of taking over the order by the computer system
d. The location of delivering the products to the customer who ordered them.
9. The value of logistic costs in relation to the turnover in the vast distribution amounts approximately:
a. Less than 25%
b. 25 – 45%
c. 45 – 60%
d. More than 60%

10. The role of the safety stock is:
a. To ultimately reduce the global cost for managing the stocks
b. To protect against risks
c. To enable the control of deliveries
d. To accelerate the flows of products.

11. Excluding the Director Production Planning, what else does PDP stand for?
a. Product Divided Production (Production Deportee par Produit)
b. Detailed Production Loss

c. Product Direct Profit
d. Compact Range of Products.

12. Logistik Company has a physical distribution network with the following structure:
- A central warehouse (three weeks of covering the sales);
- Three warehouses (one week of covering the sales);
- Four platforms.

What is the time interval the stock of a platform will be sufficient for?

a. one day
b. one week
c. two weeks
d. three weeks.

13. In a logistic process, the bottlenecks:
a. simultaneously influence the outflows and ongoing stocks
b. temporarily diminish the outflow, but only have a low effect on the ongoing stocks
c. accelerate the flow of products and increase the downstream stocks
d. diminish the upstream stocks by increasing the downstream stocks.

14. Can the Push and Pull (Pousse et Tire) methods to begin the manufacturing process coexist in a discontinuous industrial process?
a. Push upstream, Pull downstream
b. Pull upstream, Push downstream
c. Push and Pull are incompatible
d. Push and Pull are always incompatible

15. In order to reduce the effects of a bottleneck, one of the following actions is inefficient:
a. Increasing the schedule of bottleneck operation
b. Organising the upstream quality controls
c. Reducing the size of batches that must be treated
d. Rendering the material reliable.

16. A cement factory has a distribution network with three customer areas supplied by 26 t trucks from one central warehouse. The average flows between the central warehouse and customer areas are as follows:
- Area one - 5 tons per day;
- Area two - 15 tons per day;
- Area three - 26 tons per day;

Should a warehouse or a platform be located in the "centre" of each of these areas?

a. Area one: Platform

Area two: Platform

Area three: Platform

b. Area one: Warehouse

   Area two: Platform

   Area three: Platform

c. Area one: Warehouse

   Area two: Warehouse

   Area three: Platform

d. Area one: Warehouse

   Area two: Warehouse

   Area three: Warehouse.

By using the logistic theory, the correct answers to the questions in the Logitest are: 1 — D; 2 — C; 3 — C; 4 — C; 5 — A; 6 — A; 7 — C; 8 — B; 9 — A; 10 — B; 11 — C; 12 — A; 13 — A; 14 — A; 15 — C; 16 — C.

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