

## ***DIAGNOSTIC ANALYSIS OF THE SUPPLY ACTIVITY OF A COMPANY***

**Elena Sima, Assoc. Prof., PhD, Romanian-German University of Sibiu**

*Abstract: The paper is divided into two parts as follows: a theoretical part in which the aspects of diagnostic analysis and the supply activity and the second part is applicative and shows the steps that should be followed to perform such an analysis and the situations that may arise in this regard.*

*In the applicative part, the need of an overview of the company, the social and economic context in which it operates is motivated, the positive and negative symptoms objectively formulated, stipulating for each of them the causes and the effects that are generated.*

*The paper ends with several conclusions and recommendations arising from the study conducted.*

*Keywords : diagnostic analysis, supply activity, company.*

### **1. Theoretical notions on the diagnostic analysis and supply activity**

The evolution of management scientifically speaking is based largely on the use, in a systemic manner, on the diagnostic analysis method.

The enterprise, regarded from the systemic point of view, is a complex social economic organism, composed of subsystems which have multiple dynamic links between them. The systems' and its subsystems' activity is influenced by many factors, whose action needs to be known to ensure a stable and optimal functioning, in a constantly dynamic economic environment. In the process of ensuring normal operation of the private enterprise as a system, an important role is played by the diagnostic analysis.

Diagnosis requires the research of both the operation of the whole system and also of the system's structure and is based on their information status. Generally, in any company, between predetermined objectives and actual achieved ones, discrepancies may occur that lead to impaired functioning of the whole system. Based on the analysis, deviations from the terms of reference are determined, possible points of imbalance are established; the factors and causes that led to the disruption of the system are set.

The essence of the method consists in identifying and assessing the cause-effect relationship. In fact, the quality of diagnosis depends precisely on the extent to which the roots of the failures are being objectively identified, thus of the negative aspects and positive aspects and subsequently on linking the recommendations to those causes.

"Therefore, the aim of the diagnostic analysis is that, after adjusting the system, an optimal order is reached, so that the maximization of the function is ensured objectively."<sup>1</sup>

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<sup>1</sup> BRAN F., MARIN D., SIMION T. - Economia turismului si mediului inconjurator, Editura Economica, Bucuresti, 1998

The participatory character is characteristic to the diagnostic analysis. The complexity of the companies' activity requires, for a correct and comprehensive diagnosis, the involvement of several employees of different specialties, according to the nature of the problem investigated, among which there should not miss the managers and contractors directly involved in carrying out such activities. Making diagnoses by teams correctly dimensioned and judiciously structured is the indispensable prerequisite to collecting all significant information and then to interpret them in terms of complexity, multidisciplinary, according to their multidimensionality.

Another feature of the diagnostic analysis is to complete the diagnostic analysis through recommendations. Diagnosing in management, similar to the situation in medicine, precedes treatment, i.e. taking the corrective decisions concerning the dysfunctions and the development decisions regarding the positive aspects determined. Recommendations are forwarded to the preset management factors to further capitalize them on the decision and operational plan.

Etymologically speaking, diagnosis involves the ability to discern and is organically involved in the theory and practice of medicine, and by analogy in the activity of the enterprise as a social organism.

The word diagnostic comes from the Greek word "diagnostikos" which means able to discern, to delimitate objectively any subject after its manifestations. In terms of economics, the diagnostic analysis involves determining the positive and negative symptoms of the analysed enterprise, the research and analysis of the facts and responsibilities, identifying the causes that determined them, developing action programs to ensure the recovery and improvement of its performance.

Making a company's diagnosis can be made not only when it has problems, and also when "the company has a good health, but wants to improve it."<sup>2</sup>

Specialists in the field such as: Fayol H., Oscar J., Norbert Wiener, G. Plesoianu defined the diagnostic analysis as a step, a process, a method or a result.

By analogy with medicine, the diagnosis requires a study of the patient's status (symptomatology), determining their cause (etymology) and prescription of appropriate remedial measures (therapeutics).

The block diagram of a diagnostic analysis is shown in figure 1.

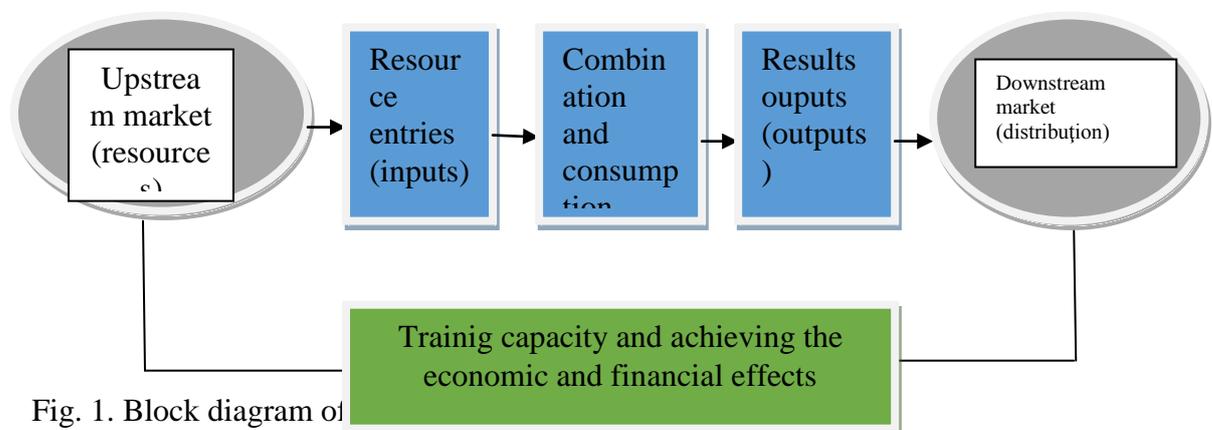


Fig. 1. Block diagram of

<sup>2</sup> CHIOU D. - Dictionar economic, Editura Bucovina, 1995

Any organization needs, along with the technical and labour equipment, raw materials, finished products and semi-finished products, electricity and heat that it gets from the environment, and that it submits to a more or less complex, modern, traditional or original transformation process, obtaining products or services that it makes available to consumers in a certain amount, of a certain quality, at a certain price and for a certain period of time<sup>3</sup>. The "supply" means the entry of materials' flows into the enterprise from the outside.

Currently, the share of costs for raw materials in total costs is generally high, representing 60% -70%, in some cases even more, justifying the consideration that providing the raw materials in all activities of an enterprise is of a strategic nature<sup>4</sup>.

## **2. Diagnostic analysis of a company's supply activity**

Diagnosis of supply activity is an integral part of the commercial diagnosis.

Commercial diagnostic targets the operations with "merchandise", meaning both the selling market of the company's products and its supply market. The main objective of commercial diagnostic analysis is to establish the current market and future market of the company and its place in the market.

In this respect, we shall analyze the internal and external factors affecting the studied company's business activity.

The analysis of the company is necessary so that the threats and opportunities that may affect the company can be identified and the factors that can help to achieve the objectives or those that can act as a barrier to achieve them. The success of environmental analysis is determined by its characteristics: complexity, quantity and quality of information regarding the environment etc.

The analysis of the external environment refers to the four forces that act on a company in general, namely: economic, technological, political and socio-cultural influences.

With regard to the external factors acting on the activity of a company, they can be divided into four broad categories:

- competition;
- customers;
- suppliers;
- substitutes.

Each of these factors can act on the activity of companies influencing their results.

In a first stage, a preliminary documentary is provided, that aims to determine and acknowledge the main characteristics of the field of activity and the company analysed and includes issues related to:

- type and legal form of the company;
- strategic objectives (establishment, development, privatization);
- object of activity;
- departments of activity, existence and functioning;
- technical-material characteristics;
- material, financial, human resources.

Identification of significant symptoms represents another step, and it refers to deviations of some synthetic indicators such as: profit, the rate of profit, turnover, physical

<sup>3</sup>CRÎȘAN, S. - Strategii în aprovizionarea materială a întreprinderii industriale, Editura Continent, Sibiu, 2001.

<sup>4</sup>SIMA, E. - Logistica, Editura Burg, Sibiu, 2011.

production, labour productivity. Thus, a company that does not achieve the required level of profit can not sell the programmed output, systematically exceeding the programmed production costs, does not achieve the proposed labour productivity and has therefore no cash and is therefore in an obvious state of imbalance.

Overall, the activity of current Romanian companies is carried out rather slowly, given the insufficient financial and human resources, rather high workforce costs compared to the qualification they need, reason why turnover is constituted mainly of revenues from manufacturing, services to third parties and other service activities.

In their action, operators must consider the domestic and international economic context of addressing specific material supply issues so that the process becomes more complex and difficult since the objective of any economic agent is to achieve a maximum profit from the work that it performs. Achieving this objective requires that, even from the stage of the supply with materials and equipment, all the methods that will lead to achieving it is driven. Already at this stage, the prerequisites for achieving the profit are created, knowing that any reduction in the purchase means profit to the buyer. Care should be taken in this context because usually reductions are granted under purchase of a larger quantity of material resources. In most cases, these reductions may be lost due to inventory maintenance costs, which can exceed these reductions.

Technological changes have a significant impact on companies, due to the rapid pace of innovation.

The activity of Romanian companies was and is hampered by shortcomings in the medium and long term forecast generated by the permanently changing legislation, yet inconsistent, with many areas discovered and cumbersome banking environment.

The significant symptoms are of two types: positive, such as exceeding profit, profitability rate increase, and negative, such as failure to achieve the plan according to the indicators, which is reflected in the economic and financial results of the company.

In the Romanian economy, there is a constant volatility in price trends, frequently occurring in true explosions, meaning that they increase uncontrollably, simultaneously with the weakening of the domestic currency market representation in relation to those in the international movement of values.

Analyzing the evolution of costs with raw materials and materials required for the execution of production/works/services compared to the turnover of the last three years, it can be seen that although turnover is declining from year to year and the number of products/works/services performed/rendered retain the same decreasing trend, the share of expenses incurred by purchasing raw materials show a slight upward trend in the last three years.

The positive and negative aspects of the supply activity are presented systematically as follows.

Table 1

Possible main positive aspects identified in the analysis of expenses with raw materials and materials

Positive aspects	Causes and effects
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Providing transport of products with own transportation means	The existence of a proper car park that allows transportation to the headquarters of most materials purchased from suppliers and that significantly reduces their purchase price
Purchase of materials from local suppliers	The vast majority of providers have offices or places of business in the immediate area, which significantly reduces transport distances and therefore the acquisition costs of goods
Purchase of good only if there are documents that prove their quality	Obligation to show the beneficiaries of the work, which leads to additional costs elimination due to the partial or total damage in the warranty period, of the equipment put in operation

Table 2.

Possible main negative aspects identified in the analysis of expenses with raw materials and materials

Negative aspects	Causes and effects	Remedies
Complete or partial damage of certain raw materials or materials	Because of downloading the delivered products in the office, followed by their subsequent loading and transport results in additional funds for replacing the products	Direct delivery of products from suppliers when they are needed
Periodic variation in prices of products with high shares in total expenditure	Because of the existence of fewer competitors in the market, there can sometimes occur quarterly and weekly price changes	Performing negotiation activities with suppliers in order to obtain lower prices, stable for a long period of time
Useless expenses with the transport of goods	Materials are supplied and kept in stock in the company's office, then they must be recharged in the company's cars and taken to other places where they are needed, hence additional costs to transport the goods	Transport of products from suppliers directly to orders when they are required

Table 3.

Possible main positive aspects identified in carrying out the activity of providing material resources

Positive aspects	Causes and effects
Ensuring collaboration with main departments of the company	Establish collaborative relationships based on providing timely information to other departments and receiving necessary information and funds required from them to develop the necessary materials, supply plan and purchase of goods
Establishing lasting relationships with key suppliers of materials	The use of quality materials at prices as low as possible, which leads to the development of long-term relationships with suppliers to gain from those benefits embodied in lower prices and high payment terms, maintaining the quality conditions
Carrying out the specific objectives of the activity to ensure with material resources	Due to the need of setting exact goals to ensure the optimal conditions of having raw materials so that there are no delays in completing the orders.

Table 4

Possible main negative aspects identified in carrying out the activity of providing material resources

Negative aspects	Causes and effects	Remedies
The possibility of staff disruptions in the department responsible for providing the material resources	Due to the specialization of those responsible on specific categories of materials in the specificity of the departments' activity, which leads to difficult filling someone responsible in case of sick leave, holiday or layoff	More intensive cooperation of members of the department so that everyone can replace their colleagues for a short period of time

The material supply plan is generally drafted at the beginning of each quarter by the chief of supply-management department, together with the department members, who are in direct collaboration with both the production department employees, who provide, based on technical projects and lists of the amounts offered, information on the amount of materials

required for the work to be performed during the year, as well as with the accounting department which provides information on the financial resources that will be used to purchase the materials.

Table 5

Possible main positive aspects identified in the substantiation of the supply plan

Positive aspects	Causes and effects
Studying both documents certifying the quantities of materials to determine material requirements and the schedule for implementation	The lists of amounts offered in tenders, technical projects, etc., must be consulted with colleagues from the production department, to determine the exact quantities required within one year
Preparation of a necessary of materials for all orders, prior to the preparation of a supply plan	Because of the multiple deadlines in different orders, it implies knowing all quantities on each order and establishing a necessary of materials to facilitate the preparation of the purchase plan

Table 6

Possible main negative aspects identified in the substantiation of the supply plan

Negative aspects	Causes and effects	Remedies
Quarterly update of the supply plan	Because of keeping the old methodology of planning the materials, without being properly adapted to the current need of the company to reduce costs, so this planning does not produce changes in the costs of materials	A monthly supply plan should be prepared, containing materials needed weekly in order to make orders to suppliers, so that they are delivered directly to orders once they have been put into practice

In order to provide materials for carrying out products/works/services, the companies are continuously developing long-term relationships with major suppliers in the industry, trying to maximize the potential of resources, in terms of lower costs.

Table 7

Possible main positive aspects identified in the supply, evaluation and selection of suppliers market

Positive aspects	Causes and effects
Continuous research of the supply market	Due to the existence of a variety of materials necessary for the execution of orders, those responsible with ensuring them must have information about the products on the market, prices, technical characteristics, quality, in order to conduct negotiations with current suppliers
Establishing correct evaluation criteria	The company's specific activities involves the use of products that must comply with all quality requirements, in terms of reduced costs, leading to the identification, evaluation and selection of the most suitable suppliers
Establishing lasting relationships with key suppliers	Thanks to the experience of the members of the purchasing department, they have the skills needed to develop long-term relationships with suppliers in order to obtain from them some advantages such as low price, longer payment terms, etc.

Management of materials and raw materials is done differently, depending on the specificity of the business segment.

Table 8

Possible main positive aspects identified in stock management

Positive aspects	Causes and effects
Application of management system (S,s) combined with the method of two containers, as a stock control system for certain raw materials	Due to the production of equipment being supplied, when the start of orders takes place only when a storage area is emptied

<p>Using a groupware system (server) to record information about raw materials and materials</p>	<p>Because of developments in computer-aided field, supply-management department members can use a groupware system, leading to better collaboration, even if they are in remote offices, editing files in parallel and reducing data storage costs.</p>
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The main opportunities that may arise from the external environment for the work of supplying companies are:

- 1) The introduction of multinational companies opening their branches in Romania increasingly leading to lower market prices;
- 2) Continued development of technological equipment that makes products have more efficient technical features and better quality;

The main threats that may arise from the external environment for the supplying activity of the companies are:

- 1) Reducing the number of orders may indirectly influence the suppliers, some of them entering insolvency or reshaping their production, migrating to another area; in both cases there remain few competitors on the market, which would automatically imply rising prices for those products.
- 2) Increasing the excise on fuel, combined with the increase in utility tariffs has direct implications in increased production costs, thus increasing prices of materials.
- 3) Increasing taxes directly influences the rising cost of all the companies involved and of suppliers, leading to price increases of materials on the market.

#### Conclusions

- 1) The expenditure of material resources compared to the turnover may be in a continuous rise for the reasons outlined above;
- 2) The continuous positive evolution of the share of material resources expenses is a negative effect of the company's supply activity, proving that the company failed to set off this situation through decisive measures, because it applies the same methods of purchasing, unsuitable to the conditions of the market;

3) To eliminate this continuous increase of the share of expenses with materials in the turnover there should be:

- taken measures to reduce waste obtained after unloading-loading the materials;
- carried out more effective negotiating approaches with suppliers;
- taken measures to reduce transportation costs of materials.

4) The activity of ensuring material resources in companies having a specialized department in this regard is generally performed under normal conditions, because the people responsible:

- develop relationships with key departments of the company;
- prepare supply plans in accordance with the execution schedule of works;
- select suppliers and establish long-term relationships with them;
- satisfy all the specific objectives of this activities.

5) Substantiating the supply plan is carried out properly in companies that promote a scientifically-based supply management, because quarterly, in general, supply-management department members prepare this plan correlated with execution graphs of orders and quantity of the materials of the works contracted during the year.

6) This kind of substantiation does not help reduce costs because the materials purchased are stored initially in the office and subsequently transported to the works.

7) A monthly supply plan should be prepared, including all of the materials needed for each week so that materials are delivered directly to works when they need to be used.

8) Evaluation criteria chosen to select suppliers are properly established in companies promoting scientific management, given the specifics of the company.

9) Stocks management of companies which promote a scientific supply management is differentiated by the business segment and there can be:

- type of inventory management with variable demand at unequal intervals combined with the red-line method, as a control system for the stocks of materials that need to be put directly into practice;
- the type of inventory management adopted is the (S, s) type, in conjunction with the method of two containers as inventory control system.
- inventory management type with variable demand at unequal intervals, for the stocks of materials to be put directly into practice is difficult to apply and there should be applied a management system similar to the "Just in time" system, together with safety stock
- For the (S, s) management type, a study of previous productions should be done, to determine the exact amount of material required as safety stock, to avoid overstocks.

To improve the supply activity, the following can be proposed:

- 1) making a monthly supply plan structured on weeks, so the materials are delivered directly to works, as close to the time when they should be put into practice;
- 2) transport for most materials should be made directly on order, significantly reducing the possibility of partial or total deterioration of raw materials or equipment;
- 3) introducing data on materials into a single file for each material, enabling the permanent knowledge of the amounts taken from the suppliers, of those taken for works and the real stock of materials;
- 4) Conducting a study on the production of the last 24 months, to determine the minimum amount of raw materials necessary for a safety stock.

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