
MATERIAL SUPPLY STRATEGY AT A COMPANY THAT PRODUCES CAR PARTS

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Abstract:

The supply activity is the one that is essential in creating quality outputs within an enterprise, having at the same time the ability to make savings, as long as it is done by specialists or closely supervised by them, because of the business components: choosing the materials that will be used in manufacturing, signing contracts with the suppliers, placing orders for supplies. The supply market analysis is an important step in developing the material supply strategy. This is preceded by the identification and evaluation of the enterprise's material needs and followed by the identification of product offers, potential supply sources, potential suppliers. The objective of this paper is to describe the conditions in which suppliers are integrated into and evaluated by the group, as well as the strategy, the methods and techniques for determining the required supplies within the Romanian company that produces car parts. The paper presents the supply process, how a new supplier is integrated to the group which the company belongs to and also the suppliers' portfolio management.

Key words: *supply, Romanian company, car parts*

1. Theoretical notions regarding the supply

Synthetically looking at the organisation and the market, communication can be divided into company communication and market communication. The company sends signals to the market to know the products/services and to convince consumers to take action, that is to consume them, and the market sends signals to the organisation through market studies, surveys, charts etc. (Teleşpan, C-tin., 2004)

Organisational performance is a measure of quality and quantity of the work carried out, taking into account the resources involved. Performance can be measured at the level of the individual, group or the entire organisation. Organisational performance increases with the increase of effectiveness and efficiency (Gorski, H., 2008).

Any company has to size its activity according to economic criteria that take into consideration the most efficient management of all its resources or it acquires to ensure the efficiency of its own results and to increase competitiveness both on the national and international market.

Figure 1 Organisational performances – efficiency and effectiveness (Gorski, H., 2008)

EFFECTIVENESS Achieving the objectives	High	Efficiency, but inefficient Objectives are achieved, but the involved resources are wasted	Efficient and efficiency Objectives are achieved and resources are well used
	Low	Inefficient and ineffective Objectives are not achieved and resources are wasted	Inefficient but efficient Resources are not wasted, but objectives are not achieved
		Low	Good
		EFFICIENCY– Using the resources	

In the general context of the need for companies to work in the market economy, in terms of profitability and competitiveness, the maximum economical use of material and energetic resources has a major importance. With the economic use of these material resources, there can be prevented:

- exercising, economically unjustified, a great financial effort for the purchase, transport and storage of increased quantities of materials;
- the impact with raw materials market whose potential is limited, which makes it difficult to provide the material resources.

Most economic activities require the use of natural resources, inevitably leaving their imprint on the terrestrial ecosystems. Excessive use of natural resources has led to the situation that various ecosystems can no longer recover or support themselves and those who lose are still the people who rely on them. (Bălan, G., 2011)

Carrying out an efficient material supply activity, in accordance with the necessities and interests of the enterprise, decisively depends on the strategy developed for this purpose. The competitive advantages should be exploited through such a strategy on the market of material and energetic resources, technical equipment, semi-finished products, supplies, etc.

Within the general strategy, the development of a specific strategy should be taken into account, namely: pricing strategies, supply sources strategies, strategies to obtain market opportunities, defensive strategies, balance strategies, penetration strategies.

The elements that characterise and define a supply strategy are the time horizon (usually between 3 to 5 years); the impact over the economic development of

the enterprise; focusing the efforts that should support a supply strategy; the type of decisions that shall be developed and adopted (decisions that would allow the creation of a competitive advantage); the universality of supply strategies which means that there should be considered that any strategy must be developed so that it ensures its implementation with the general strategy of the enterprise.

Supply is a complex process which has an actual and significant contribution in ensuring the enterprise's efficiency considered as a system, namely: (Sima, E., 2011):

- establishing, in terms of quantity, quality and structure, the needs of consumption in order to provide a normal development of the production process;
- developing the material balances;
- completion and monitoring of contracts with the suppliers;
- reducing the supply and storage costs;
- promoting certain actions to reduce loss of materials, recovery and reintroduction into the productive circuit of reusable materials;
- promoting actions to ensure saving material resources.

Currently, the share of costs related to materials within the total costs is generally high, representing 30%-70%, sometimes even more, which justifies the consideration that ensuring the material resources within the entire activities in an enterprise is strategic.

In practice, increasing the degree of recovery of raw materials and materials is possible by:

- providing a need of consumption correctly sized as volume, quality and structure;
- promoting manufacturing technologies or improving the existing technologies so that they provide the economic usage and thus the efficient recovery of raw materials and materials;
- changing the design of finished products in order to reduce sizes and also to change, where necessary, the concept of packaging;
- increasing the degree of processing the raw materials and materials, which means a higher added value and thus a higher economic value of finished products;
- using in the production raw materials and materials with new, better characteristics and also of better machinery and equipment;
- modernising the rules of consumption and economically sizing the lots to be supplied and inventories.

The materials' supply management can be seen as a way to group the specific activities, interpreted through a *systemic approach*.

In the category of activities for whose achievement an increased attention is required there is:

- studying the supply market, the potential and real suppliers;
- selecting and testing the suppliers' reliability;

- developing stages in the purchase (acquisition) of material resources and technical equipment and also in the field of inventory management;
- negotiating the terms of sale and purchase, marketing terms in general and completing the action, mostly based on commercial contracts;
- monitoring the evolution of the supply market, the resources' structure and potential, prices etc.

By the nature of the information, the material supply subsystem may also contribute to the improvement of technical performances and the quality of products manufactured by the company.

The role of active participation subsystem to substantiating the enterprise's development strategies are shown by:

- the development and substantiation of efficient strategies in the purchase of material resources and technical equipment;
- the development of strategies for action in the relation to the suppliers that would meet the enterprise's interests;
- the development of an appropriate strategy in collecting and transmitting information;
- adopting a strategy and an efficient strategy in hiring and training the labour force from the field of supply of materials, in evaluating the quality and efficiency of work, encouraging competition based on professional expertise, to ensure strong motivational elements etc.

The logic of a demanding supply management is determined by financial considerations and the argument takes into consideration the need to permanently control the financial funds invested in buying materials, storage, handling and usage.

We can talk about a scientific management in terms of supply if this is the result of a phased and logical development of these activities, if there are mainly used ways and instruments to achieve the optimization of the components of this complex, indispensable process of an enterprise, which is the supply.

Savings due to the supply activity may result from:

- obtaining, after negotiating with suppliers, some favourable purchase prices;
- using some supply alternative sources;
- using substitute materials;
- stimulating the suppliers' interest in redesigning – changing the design of certain products that are about to be purchased, so that they are cheaper, without altering the quality, cost and performances;
- using some standard products for the production process of certain products and components;
- including specific clauses in the supply contracts which would basically not allow the raise of prices or if accepted, to be the result of negotiations that does not exceed a certain level originally agreed.

The action of the supply process begins, in fact, with the nomenclature of materials and equipment because they actually form the subject of that activity.

Developing the material and equipment nomenclature is the result of the close collaboration between all compartments of the enterprise because it includes all resources of materials and equipment that are consumed during a certain period, either to achieve the production, services, works, or for other purposes such as repairs, maintenance, collaborations, etc.

The classification of materials and equipment has to serve the following purposes:

- ensuring all the necessary material resources and equipment of the enterprise's activity during a certain period of time, respectively during the period for which the supply needs are determined;
- elaborating the requests of material resources and equipment to request the offers from internal or external suppliers;
- knowing in detail, up to the more detailed features, the materials and the structure of the enterprise's consumption in order to make a consistent insurance of real needs of necessary material resources consumption, which corresponds to the qualities the production must have at a given moment;
- knowing the suppliers offer price and thus determining the supply, transport, handling costs so that the material with the lowest purchase price can be chosen;
- determining and ensuring the conditions and capacities for storage, conservation, internal transport for the volume of material resources that has to be supplied;
- knowing at any time and in detail the inventory from the enterprise, warehouses or manufacturing departments.

In preparing the classification, there are two successive stages:

- preparing the action, which consists of the collection of information carriers (commercial catalogues, standards, lists of consumption rules, specifications, etc.) from which there shall be collected the information needed to define the content of future nomenclature and also to establish the shape of this instrument;
- the actual elaboration;

In the supply of materials and technical equipment, a great importance is given to the selection decision of supply sources and suppliers. Choosing the supplier has become a real "art"; this is based on the prior study of main data and information which could characterise each supplier (information which is registered in special card catalogues opened for each supplier and which shall represent the original documentation). Based on the information collected, a comparative evaluation is provided, which classifies each supplier according to a percentage (or grading) given depending on the importance of the established characterisation criteria. Several grading systems of the supplier have been conceived. The objective and the subjective criteria are taken into consideration. The evaluation is made both for the real suppliers (current or which there has been worked with), and for the potential suppliers (new or already existing).

In the selection on degrees of importance, a great interest is given to the criteria through which competitive advantages are being expressed to the disadvantage of those which provide facilities. Moreover, some criteria may be considered "critical" (the quality of provided resources, complying with delivery conditions, the price) and others "stimulating", to complete the image over suppliers (the technical design and production ability, after sale services, managerial ability, resilience, financial potential).

The creditworthiness (solvency) index is a synthetic indicator which gives a global image of an economic agent expressed by a single figure. For the most rapid perception of the creditworthiness index, the grading system is used. In the German practice, the grading system from 1 (maximum grade) to 6 (minimum grade) is used.

Table 1. Grading system to calculate the creditworthiness

Cur. no.	Risk factors	Percent age%	Awarded grade					
			1	2	3	4	5	6
1	Mode of payment	20		0.40				
2	Recommendation on credibility	25		0.50				
3	Business evolution	8			0.24			
4	Status of orders	7		0.14				
5	Form of organisation	4			0.12	0.16		
6	Branch of activity	4						
7	Age of company	4		0.08				
8	Volume of sales	3		0.06				
9	Volume of sales per employee	4			0.12			
10	Number of employees	2				0.08		
11	Registered capital	5				0.20		
12	Company's payment behaviour	5	0.05					
13	Customer's payment behaviour	5		0.10				
14	Company management	4			0.12			
TOTAL		100	0.05	1.28	0.06	0.44		

Creditworthiness index = $0.05 + 1.28 + 0.60 + 0.44 = 2.37$ (Bășanu, Gh. and Pricop, M., 1997)

2. Presentation of the analysed company

The group from which the company is part of is one of the main suppliers of automotive equipment in the world. Worldwide, the group operates in 160 locations in 28 countries, with 28 research and development centres, with approximately 60.000 employees.

85% of the group's sales are in Europe, the most competitive market and with the highest requirements in terms of quality, comfort, safety and environmental protection. Therefore, the optimization of its industrial resources is an ongoing process, the group directly supporting competitiveness in the automotive industry.

The group's majority shareholder is the French manufacturer Peugeot Citroen.

An industrial group that provides its services for the automotive manufacturing industry, has an annual profit of over 10 billion euro, 76% of this profit being achieved thanks to the 4 modules for the vehicle's interior. The group covers 35% of the European market in the field, which makes it the leader in Europe, being situated on the third place at a global level.

The group's activity, which is strongly developed, is represented by 6 major modules of car components: boards, seats, exhaust systems, interior doors, front bumper, acoustic packages, modules representing approximately 15% of a car's value.

The group is certified ISO/TS 16949 since February 2000, being thus recognised as manufacturer of auto parts of the highest quality standards. The Romanian company, member of the group, has been certified with the same quality standard in 2006.

The member Romanian company is a limited liability company, whose construction began in September 2003, totalling an investment of 7 million EUR.

The Romanian company's object of activity is the production of car seat covers. For now, the company produces seat covers for Audi, Toyota, Peugeot and BMW. The company is the most important supplier of car seats in Europe and the leading producer of seat adjustment mechanisms worldwide. The seat is one of the key elements of comfort differences between cars and it plays a crucial part in the protection of the passenger. The company assembles seats and manufactures its main components. Five percent of the sales are invested in research for safety, comfort and improved attractiveness, which would make seats lighter and less expensive.

The Romanian company, part of the software division, has as object of activity the cutting and manufacturing of seat covers for different types of cars:

- TOYOTA
- in May 2004 the first seat covers were sewed for TOYOTA YARIS, NY2 model;
- in October 2005 the first seat covers were sewed for TOYOTA YARIS, YA5 model;
- in September 2008 the first seat covers were sewed for Toyota Restyling;

- Seat covers are delivered to a French manufacturer Toyota Boshoku, with a percentage of 38% of the total of manufactured covers, a percentage recorded in 2010, down 6% from the previous year;

- AUDI

- in March 2005 the first seat covers were sewed for AUDI A4, B7 model;

- in 2007 the first B8 leather, B8 material seat covers were sewed for Audi;

- covers are delivered to a German manufacturer, with a percentage of 33% from the total number of produced seat covers, a percentage also held in 2010, 2 percent up from the previous year;

- PEUGEOT

- in February 2006 the first seat covers were sewed for PEUGEOT, A7 model, now the company makes 5 different covers for Peugeot, including a natural leather cover model;

- Covers are delivered to a Slovak manufacturer, with 26% of the total number of produced seat covers, a percentage recorded in 2010, increasing by 5 percent from the previous year;

- BMW

- in May 2009 the first seat covers for BMW were sewed;

- seat covers for this model are delivered to the German manufacturer Faurecia Leipzig, with 3% of the total number of produced seat covers, a percentage recorded in 2010, 1 percentage more than the previous year.

The entire production in Romania is for foreign markets, in countries such as France-Toyota, Germany-Audi and BMW, Peugeot-Slovakia.

3. The Romanian company's strategy in material supply

The suppliers of the Romanian company are divided into two big categories: suppliers of components and suppliers of materials. In number, suppliers of components are numerous, 31 suppliers, while there are 25 suppliers of materials. Most suppliers are from Germany, then France, with a single supplier from Spain and one from England.

The largest supplier of components is OKE, with 46% of all supplied components, followed by ROMPRIX, COBA SK, AMANN, FATRA. There are various small suppliers, suppliers imposed by the customer through signed documents.

The evaluation of the supply process quality by a certain supplier is made through an indicator internally used by the group, called MPM (Missed Per Million) and is calculated by the formula:

$$MPM = (\text{Number of lines wrongly delivered} / \text{Total number of lines ordered}) \times 1\,000\,000 \quad (1)$$

The number of lines represents the number of references ordered. The closer this indicator gets to zero, the closer is the supplier's supply process to the requirements, and when this is 0, it means that the supplier has met the order in terms of quantity, structure, quality and time requested.

This indicator is monitored daily, according to the achieved receptions and it is recorded and kept as evidence.

Below there is an example of the suppliers' MPM situation during the last three years:

- Suppliers are divided into two categories: suppliers from inside the group and those from outside the group (internal suppliers/ external suppliers);
- Then, according to the quality of the supply process, respectively of the MPM, they are registered in "Worst suppliers of the month" and "Best suppliers of the month";
- The MPM is plotted, the red line represents the target set by the customer for that month.

The policy regarding suppliers is based on several key procedures which are found in all entities of the group around the world and are based on four areas of action:

- Portfolio management;
- Integration of suppliers in the development stage;
- Integration of suppliers in the series stage;
- Supply of inventory and invoicing.

Each area of action combines processes that suppliers are required to follow to ensure long term relationships based on excellence.

The supply process is based on the 3P: Portfolio (panel), Programme, Performance. It is designed to follow the product's life cycle.

The first step is to be selected and accepted on the list of vendors and then in the suppliers' portfolio. In order to be selected on the company's list of vendors the supplier has to meet the selection criteria described in the quality assurance guide for suppliers. If there is a possibility to develop the relationship between parties, the potential supplier shall be asked for additional information on the held quality certificates and it shall be requested to sign a confidentiality agreement. If these criteria are met, a team of the company's representatives will make, at the vendor's headquarters, an evaluation of its capacity, which might lead to its inclusion in the list of vendors.

The second step consists of selecting the potential supplier for an enquiry. The seller shall closely collaborate with Faurecia representatives to meet the targeted objectives regarding the quality, cost and delivery. During the stage of defining programme, the supplier might be involved in the following stages:

Table 2. *Supplier's involvement*

Before the customer's decision	Enquiry	Selection of supplier	Quality/Cost/Delivery Management
<p>If he is listed on the sellers' list as expert-type supplier and is included in the customer portfolio he shall be involved in the stage of cost estimation for the requests coming from the company's customers and shall contribute to establishing the project's objectives</p>	<p>If he has not been contacted by the company during the estimation stage, the supplier shall be asked to fill in a commercial offer in the company's standard format</p>	<p>Contracts shall be entrusted only to approved sellers. The commercial offer shall be evaluated under various aspects: quality, price, delivery, equipment, terms of supply, continuous improvement programme, etc.</p>	<p>If he had been selected as supplier for a given programme he shall be requested to work closely with the company's representatives in order to meet the set objectives related to quality, cost and delivery. He shall also be requested to comply with APQP (Advanced Product Quality Planning) programme.</p>

Source: Documentation of the Romanian company

During the series production stage, the supplier shall be requested to define a long term action plan which shall target continuous improvement of quality, productivity and delivery time. Performance shall be monitored by the acquisition representatives from the company.

The company requires future suppliers the following:

- ensuring delivery at the best costs according to the economic criteria provided by the acquisition representatives;
- complying with the quality requirements.

Full satisfaction of its customers is the company's main objective. Strict quality and reliability criteria have been established to achieve this objective, which are applied both to internally manufactured products and to the products purchased from suppliers. To meet this requirement, the "quality assurance" procedure was implemented, a preventive approach to make sure the delivered products meet the specifications and requirements of the company's customers. A close collaboration, since the beginning of the partnership is therefore necessary between Faurecia and its suppliers in order to obtain levels of performance at the beginning of the production and reliability of competitive services worldwide. The achievement of the final objective

is desired – a production without incidents. The absence of interruptions enables the production of flawless products, with optimal delivery terms and rapid resolution of any problem. A strict introduction of this procedure in combination with the control from the company guarantees the success on an increasingly competitive market.

- The required quality standards: the supplier's enterprise must have implemented a quality system recognised by the automotive industry. Since 2004, only ISO TS 16949 system is accepted. Registration certificates shall be made available upon request. All suppliers shall use AIAG (Automotive Industry Action Group) procedures for APQP, PPAP, MSA, FMEA and SPC

APQP Advanced Product Quality Planning

PPAP Production Part Approval

MSA Measurement System Analysis

FMEA Failure Mode and Effects Analysis

SPC Statistical Process Control

- Performance requirements:
 - the supplier is required to submit in time the PPAP documents filled in with updated information;
 - the supplier (including subcontractors) are required not to make any changes on the design, materials, production process, logistic flow, without the company's consent;
 - the supplier must monitor the process and quality of performances and to demonstrate their continuous improvement;
 - the supplier takes full responsibility for the manufactured products, and nonconformities and their effects could be charged to him.

The company must receive an initial response to the issue claimed within 24 hours and a final answer within ten days. Moreover, once the issue notified, the supplier must present a plan of action for that problem to never again occur.

- the supplier must comply 100% with the assumed delivery term;
- monitoring and control of the supplier's performances;
- the supplier's performance shall be evaluated as it follows: delivery of PPAP file in time, meeting the stages of the programme and preparing the documentation on reducing the risk of failure to comply with the quality standards through FMEA procedure;
- the supplier's performance shall be permanently monitored through quality indicators (ppm level – parts per million), cost reduction and delivery. All key indicators shall be submitted monthly and reported to the target, if they are not adequate, plans of action for their improvement shall be presented;
- the supplier's performance shall determine his selection for future programmes;
- requested documents;
- the supplier must receive approval from romanian firm for the first delivery;
- the supplier must follow the advanced product quality planning process;

- the supplier must take part in all meetings before entry into production;
- the supplier must provide documents for all performed changes;
- the supplier must monitor and control all key characteristics (safety and security of work, 0 flaws guarantee – ppm <15) uninterrupted traceability of a data base and have a continuous improvement plan;
- the process must be permanently controlled and the capability indices must have the following values $C_{pm} > 1,67$ and $C_{pk} > 2$;
- packaging and labelling – packaging shall comply with the company's specifications and shall contain identification elements;
- meeting the general terms and conditions of sale.

Portfolio management of suppliers is one of the key characteristics of the acquisition policies of the group which the Romanian company is part of. Its objective is to identify and manage a limited portfolio of vendors that includes the best suppliers in the world, which shall contribute to the customer's satisfaction of the group.

Sellers included in the list shall meet the criteria of excellence described below and shall receive the status of "Panel" supplier (Portfolio). At present, only a part of the sellers in the list have the status of "Panel" suppliers. Acquisition representatives must initiate PLANS OF ACTION to motivate a supplier to be integrated in their portfolio or to reduce the number of suppliers that cannot meet the group's requirements within a short time.

The management of the suppliers' list and of the portfolio is made in several stages described below. The final product of this process is:

- Making a classification of the sellers from the list and assigning them a status;
- Making a list of the suppliers for which a plan of action should be defined, which shall be monitored by the acquisition representative and the supplier;
- Making an evaluation of the new suppliers that might enter the list.

Each supplier on the list is evaluated according to the Panel criteria. The supplier's status resulting from the evaluation process will be like in the table below.

Table 3. *PANEL Criteria*

VENDORS LIST	P	PANEL Supplier fully approved for development and production. Only suppliers who meet all criteria are considered included in this category. All criteria are in accordance with our policy.
	I	INVESTIGATION Suppliers from the list, but who have not yet been fully evaluated or who are on hold due to the non-compliance with all the conditions. PLANS OF ACTION should be initiated for these suppliers in order to meet all criteria. OR New supplier who meets all requirements but has not yet been evaluated.
	H	ON HOLD FOR DEVELOPMENT Not contacted for the development of new projects but current projects are maintained.
	E	TO ELIMINATE Supplier which cannot be accepted. For these suppliers, the company must initiate plans of action before being eliminated within one year.
	S	SUPPRESSED Suppliers that have been eliminated or that do not meet the company's criteria. No project shall be entrusted to them.

Source: Documentation of the Romanian company

Suppliers that have been suppressed shall be kept in a data base to not be contacted again.

There are cases where suppliers are imposed (mandated suppliers). A mandated supplier is the supplier chosen by the customer. These suppliers must also follow the evaluation process. They shall be identified like the mandated suppliers for a particular programme within the Panel. Concessions shall be made for these suppliers if they are categorised as level I, H or E suppliers.

An improvement plan shall however be initiated and the acquisition representatives shall be able to propose alternative variants. First, each new supplier or suppliers from the sellers' list shall be evaluated according to the effective procedures. Before initiating the first visit to the supplier, the acquisition representative shall collect the basic documentation on the given enterprise. The standard instruments are the vendor's profile form and the confidentiality agreement sent by the company's supplier and filled in by him.

The vendor's profile includes the following information:

- general information on the company;
- contact details;
- information on the number of employees;
- financial information;
- information on the main customers;
- information on own suppliers of raw materials;
- information on the main products delivered to the company and to other customers;
- information on the processes and technologies;
- information on the production, laboratory, warehouses, sale facilities.

The seller shall show the acquisition representative the ISO quality certificates it holds. ISO TS 16949, ISO 9001 but also ISO 14001 QHSAS 18001, etc. are accepted. A copy of such certificates shall be attached to the seller's portfolio form. Once a year, the acquisition representative shall check the validity of the quality certificates presented by the supplier.

During the third stage, suppliers shall fill in the self-evaluation form in which he shall answer with yes or no to questions regarding the way in which they:

- act in accordance with the requirements of the company's system of excellence;
- act in accordance with the requirements of the quality system;
- manage the supply chain;
- guarantee the quality of materials delivered for the series production;
- provide solution on their own initiative;
- monitor performance;
- improve and develop the management;
- solve incurring problems;
- others.

This self-evaluation for shall be completed once every 3 years or when a new supplier is integrated in the panel.

During the 4th stage, the supplier shall be evaluated in terms of finances. This evaluation shall target the evolution of cash and turnover. The items from 3 and 5 shall be evaluated and compared with the Panel / Market average.

Table 4. *Financial evaluation*

		Target
1	Evolution of cash	> 12
2	Turnover with the company / supplier's turnover	< 30%
3	Net long-term debt	< 0,8
4	Taxes / turnover	< 2,5 %
5	Gross surplus before taxation	> 6 %

Source: Documentation of the Romanian company

Suppliers shall be further on evaluated if results are negative.

Stage 5 is optional; it is applied only for new suppliers.

Its purpose is to compare the potential competitiveness of new suppliers with that of the already existing suppliers from the seller's list. The acquisition representative shall send an enquiry to the supplier and shall analyse the information send by him.

Table 5. *Evaluation of supplier's offer*

Technical analysis

Content of innovation

Understanding the company's standards

Economic analysis

Competitiveness of the offer (guideline: conditions offered by the main supplier)

Presentation of cost division

Forecast of annual productivity

OTHER

Acceptance of company's conditions

Source: Documentation of the Romanian company

According to the evaluation made until now, the acquisition representative shall decide if the supplier is further investigated.

During the 6th stage, the supplier shall be audited at the production site. If the supplier's performance does not comply with the company's expectations, the audit shall be carried out. A new audit shall be planned when one of the following events occurs:

- the supplier changes location;
- the supplier's performance does not meet the target;
- the quality certificates have not been presented in due time;
- a new evaluation is required in order to award a new project (new business);
- no other audit has taken place during the last two years.

The auditing team shall be composed of the acquisition representative, the quality representative (SQC - Supplier Quality Commodity) and an expert if necessary.

The purpose of the audit is to validate the information supplied by the self-evaluation form and the confirmation that the supplier has the capacity to enter the seller's list. There are also evaluated: the supplier's production ability; logistics, human resources, management, etc., and also the supplier's level of performance: expert, designer, manufacturer, subcontractor.

Stage 7 includes only checkpoints for the suppliers listed in the seller's list.

- the supplier's performance is reported at the targets mentioned in table 6;
- the supplier's performance is evaluated every month;
- suppliers bind themselves to reach a level of performance and continuously improve it.

Table 6. *Supplier's performance in relation to the targets*

	TARGET
QUALITY OF PRODUCTION	
Ppm (for the last 6 months)	< 50
Flaws (monthly)	< 15
Quality system certification	DA
QUALITY OF PROGRAMME	
APQP monitoring	100 %
LOGISTICS – RATE OF DELIVERY	
Logistics – delivery in time	100 %
PRODUCTIVITY	
Global Index (minimum 5% per year)	> 5 % / year

Source: Documentation of the Romanian company

Once the whole process is completed, suppliers shall be classified according to the table:

Table 7. *Classification of suppliers*

	Quality certification & confidentiality agreement	Employment in partnership with the suppliers (new supplier)	Financial criteria	Evaluation at the production location	Performance criteria	Offer (optional)
Panel	Mandatory	Answer YES	OK or plan of action	A	OK or plan of action	OK or plan of action
Investigation	Mandatory	Two answers NO	OK or plan of action	B	OK or plan of action	OK or plan of action
Hold	More than two answers NO	OK or plan of action	B, C	OK or plan of action	OK or plan of action
Eliminated	...	More than two answers NO	OK or plan of action	D	OK or plan of action	OK or plan of action

Suppressed Suppliers that have been eliminated or that do not comply with Romanian firm criteria

Source: Documentation of the Romanian company

Each of the seven stages shall be evaluated according to the table. Auditors shall grade the average value with (X), the minimum value with (-) and the maximum value with (\$) for each position from the final evaluation table.

Here is an evaluation example of a level B expert supplier.

Table 8. *Example of final evaluation table*

	Number of questions	LEVELS				
		Score				
SECTIONS		1	2	3	4	5
1. Quality	10				X	
2. Cost	6			-		
3. Delivery & Supply chain	6				X	
4. Design/Development *	5			-		
5. Management	10			-		
6. Continuous improvement	4					X
7. Sub-contractor	5				X	
Total questions	46					

*Applicable only for Expert supplier or Designer Source: Documentation of the Romanian company

LEVEL OF EVALUATION:

- A = minimum level 4 for all individual sections
- B = minimum level 4 for 2 individual sections
- C = minimum level 3 for all individual sections
- D = level 1 & 2 (unsatisfactory)

4. Conclusions

In the Romanian company, the acquired material resources are more than 60% of total costs, therefore a rigorous selection of suppliers is required. Consequently, the company’s level of performance greatly depends on that of its suppliers. In order to achieve its goals concerning quality, cost and delivery, the maintenance of a close relationship with the suppliers is necessary.

The Romanian company’s mission is to produce and deliver innovating, high quality products, to provide services and technical solutions that contribute to the increase of its customer’s competitiveness and create value for its employers and shareholders.

The supply is a complex activity in an enterprise, which has an effective and significant contribution in improving its activity by establishing, in terms of quantity,

quality and structures the needs of consumption for ensuring a normal development of the production process, concluding and monitoring contracts with suppliers, reducing supply and storage costs; promoting actions to reduce the loss of materials, recovering and reintroducing reusable materials in the productive circuit. In this respect, among the activities that form the supply process, the most important are planning and control, purchase, and then the reception and storage of materials received from suppliers and the transport.

The supply activity has relationships with all departments from the enterprise, as well as with various outside entities aiming to provide a favourable environment for the enterprise to run efficient, quality and competitive production or services.

For the Romanian company, the supply process management relies on its own system of excellence, which has, on the second level from the basis, a good partnership with the suppliers.

The importance of the material supply subsystem for the enterprise's activity arise also from the fact that it provides the material resources, which have a significant percentage, i.e. 50%, in some industrial branches even exceeding 80%. As a consequence, any action of the supply subsystem which causes the reduction of material costs is beneficial.

Ever since the beginning, the method used by the Romanian company in the supply process was based on the MRP method, orders being sent to suppliers by fax, e-mail, or EDI (Electronic Data Information), the latter being possible only for the suppliers using the same working system, XPPS and certainly, if you want to send the orders by EDI. The method of transmission of orders has been established since the beginning of collaboration with each supplier through the concluded logistic agreement.

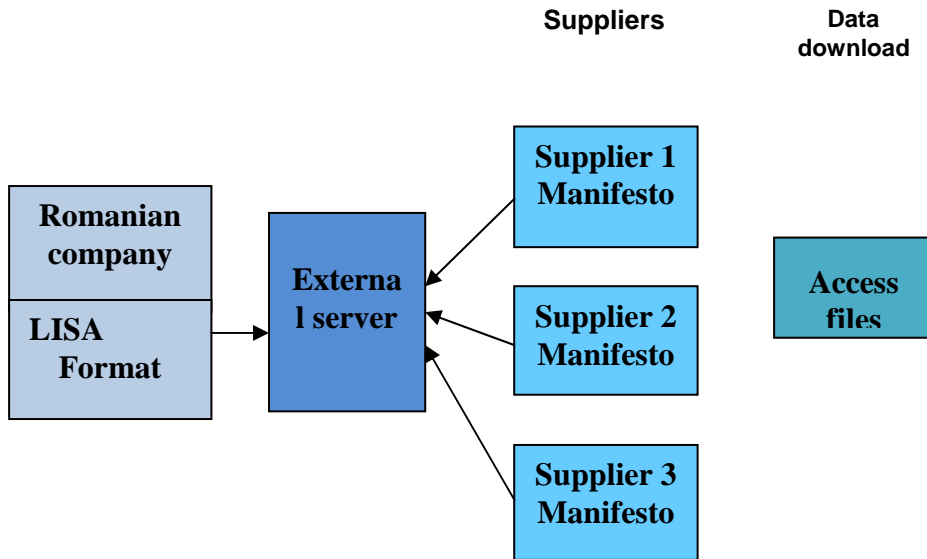
LISA (Levelling Interface System Application) is an additional programme of the supply system used by the Romanian company, and not a replacement of it. There is a connection between LISA and XPPS, namely that orders generated by MRP, within the XPPS, are translated in this programme for adjustment, for a predefined period of time and orders shall turn into order intakes (depending on the supplier and the logistic agreement with it), as a manifesto, stipulating all details for the supplier, the details of a loading: the number of necessary lorries, the number of boxes for each lorry, the date of collection, the hour of collection of goods.

The conditions to use this new programme consist of the computer's configuration settings: the use of the 6th version of Internet Explorer, the 5th version of Acrobat Reader programme, Microsoft Access programme from the Office package, as well as the enterprise's agreement to pay an annual 500 EUR tax to a brokerage company to an external internet server.

This server shall receive orders from the customer in the format and with the details desired by him, and shall further send an e-mail to the supplier to inform him that he has received the order intakes for the following week.

The supplier shall download the data and use it as a loading list, these manifestoes being found in the documents accompanying the goods.

Figure 2 LISA mode



The objectives of implementing LISA levelling programme:

- the supplier shall undertake to provide the required quantity and at the necessary frequency the orders placed for ensuring internal production and delivery to the customer;
- the customer shall commit to reduce safety inventory in order to have the same reference / quantity in each lorry;
- the customer will undertake to reduce the variability of the offer sent to suppliers and facilitate their flexibility. .

The implementation of LISA means:

- standardization of PC&L supply process;
- levelling the supply needs;
- increasing frequency of supply;
- establishing a collection relation (pick-up) for the carrier.

As it was shown throughout the paper, supply is a complex activity in an enterprise, which has an effective and significant contribution in improving its activity by establishing, in terms of quantity, quality and structures the needs of consumption for ensuring a normal development of the production process, concluding and monitoring contracts with suppliers, reducing supply and storage costs; promoting actions to reduce the loss of materials, recovering and reintroducing reusable materials in the productive circuit. In this respect, among the activities that form the supply process, the most important are planning and control, purchase, and then the reception and storage of materials received from suppliers and the transport.

The supply activity has relationships with all departments from the enterprise, as well as with various outside entities aiming to provide a favourable environment for the enterprise to run efficient, quality and competitive production or services.

For the Romanian company, the supply process management relies on its own system of excellence, which has, on the second level from the basis, a good partnership with the suppliers.

Developing a strategy based on the purchase from a market favourable to the suppliers has to be done with caution; generally, the long-term, stable supply relationships are taken into consideration.

All suppliers of the enterprise are from the European Union, they have firm contracts through which they commit to honour the order within the time, quantity and requested place.

Being among the first places in the world at the supply of automotive components, the group the Romanian company is part of is in a permanent struggle to maintain its market position, to have great relations with its customers and suppliers, to find new opportunities for development.

5. References

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