

THE PROCESSES OF PROCUREMENT PRODUCTION MATERIALS AND SEMI-FINISHED PRODUCTS IN THE COMPANY ZF SACHS TRNAVA A.S.

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Summary: The process of procurement of production materials and semi-finished products belongs to the process supply chain logistics, which is essential to ensure the production schedule. It is necessary to ensure that production material was supplied at the right time, at the right place and in the right quality. Purchasing and supply mainly related with the determining and ensuring needs and material resources for the effective operation of the production process. Ensuring of purchase and continuous supply during the manufacturing process is extremely challenging task, because often regards hundreds or even thousands of items specified to scheduling daily production tasks. To handle this task decisive manner affects the economy of the production process.

Key words: Logistics, procurement, supplier, quality, evaluation.

INTRODUCTION

The subject of logistics, which includes a procurement logistics, is a research, design, implementation and management of logistics flows of materials, goods and services, and related information flows and cash flows. Deals with the activities, which allowing the flow of materials, products and services from the place and time of raw material extraction, to the point of final consumption, deals with cash and information flows, as well as management activities which sets in motion materials, products, services and cash flow, to meet the needs of consumers at minimum cost. Logistical support of production is not possible without purchasing and supply chain logistics. The corporate procurement is the process of ensuring raw materials, semi-products and products that are necessary for the production process and supply of services. For purchase we consider to be those activities that relate to the market and market operations. This includes market research, pricing analysis, ensuring contracts and the overall administration (1).

Procurement ensures in the enterprise the semi-products and products, which are necessary for the production process. Regarding procurement of material and semi-finished products, in the past to the labeling of that activity was used name of the material supply.

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Procurement is divided into (2):

- purchase,
- procurement logistics .

1. THE PROCESSES OF PROCUREMENT PRODUCTION MATERIALS AND SEMI-FINISHED PRODUCTS IN THE COMPANY ZF SACHS TRNAVA

Customer enters the required amount of products to receive. This order is processed by the responsible of the sales staff in SAP (Systems, Applications, and Products in Data Processing). According to bill of materials of finished product in the SAP is customer requirement automatically divided into purchased parts, for which is the responsibility of the purchasing department employee. In the event that material is not in stock and it no possible it at any given time will to ensure, subsequently the employee of sales informs failure to fulfill period. After consultation with the customer is the proposed new delivery date or partial delivery of.

The all purchased material in the company ZF Sachs Slovakia a.s. Trnava is supplied by the automobile transport. The suppliers provide the transport of material.

The company ZF for its production program consumes mainly metal and steel materials.

The company procures the material, which is divided into two groups:

- manufacturing material,
- semi-finished product.

Material needed for the production of DMF (dual mass flywheel)

In the SACHS planetary dual mass flywheel, the planetary gear and the torsional damper are incorporated into the flywheel. For this purpose, the flywheel is divided into a primary and a secondary mass, hence the name „planetary dual mass flywheel”. Rattle and booming noise are now a thing of the past.

1. manufacturing material: material which after receiving further processed in the company's own production process. This includes: a primary flywheel - basic, toothed wheel - basic, secondary flywheel - basis.

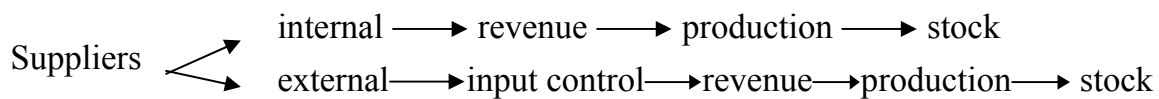
2. semi-finished product: material, after receiving company further does not handle its own production process. Among purchased blanks include: annular gear, lubricating grease, gasket ring, case, cover plate, spring plate, side bearers, compression spring, planetary wheel, radial ball bearing KI-6, sealing plate, cylinder pin, rivet-head 7x21,7 a 7x15,2, bourdon tube.

Purchased materials and semi-finished product processed in its own manufacturing process is then composed into a single unit and create finished products DMF which the company sells to its customers.

2. THE PROCESSES OF SELECTION AND EVALUATION OF SUPPLIERS

System selection and evaluation of suppliers intended to ensure that that the company ordered only with reliable and approved suppliers.

ZF SACHS purchasing production materials and semi-finished product from suppliers on the basis of orders. The company divides suppliers on the internal and external.



The company ZF Sachs Slovakia has most of the suppliers from abroad, especially from Germany and other EU countries, but also from Africa and America. Between internal suppliers are classified sister company based in Levice. The parent company ZF SACHS AG ranks among the external supplier.

Among, the Trnava plant and parent company in Schweinfurt operates car traffic daily. From the Trnava are transported the finished products for ZF Trading Schweinfurt. And from ZF Sachs Schweinfurt to Trnava are transported parts needed to produce DMF. Cars drive into Kitzingen, where is the foundry, which supplying castings needed for the production of DMF. This transport is invoiced parent company, and part of the costs paid the ZF Sachs Slovakia Trnava. Indication of how much it is, in company did not provide.

In 2012 were 240 supplies among plant in Trnava and its parent. At least one, but usually three trucks drive every weekday between Trnava and Schweinfurt. Incorrect place of unloading was caused problems in 12 cases; in 10 cases was the cause of late delivery of bad technical condition of the vehicle, weather conditions caused problems for timely delivery 5 times.

Given that this is the everyday use of the services forwarder transport costs are high. Also services forwarding companies are associated with problems affecting the timeliness of delivery. These costs and problems could be reduced buying and using their own car for this transport.

3. CHOICE OF THE SUPPLIER

The requirement to choose a new supplier arises in the case when:

- is introduced into the production of a new product,

- the requirement for changing supplier - poor ratings supplier
- the requirement of selection for duplicate supplier,
- a requirement for rationalization measures in the field of the input material,
- customer enters a request to change supplier.

After receiving requests for ensure new purchased parts or requirements change of supplier already approved the purchase parts, employee of purchasing department examine the possibility order a new , respectively the approved component from the existing and approved supplier in ZF. If it is not possible choice of best suppliers on the list of approved suppliers, followed by the determination of a new supplier. For the approval of a new supplier is responsible head of quality management.

As the technical basis for requirements for supply be true the following documents: a valid detail drawing, planning needs including outlook needs, existing corporate norms, if are necessary special trials and agreement and QR 3 - Guidelines for finding quality of supplies.

When choosing a new supplier, it is necessary first of all to make a market analysis and to determine what kind of suppliers operate on the market. This analysis of the market you make the company ZF Sachs Slovakia itself. From all potential suppliers is selected a group of suppliers who are able to meet the demands of society, and which is sent to the demand of society and the questionnaire. Potential suppliers forwarded up to company your bid and completed questionnaire. After verification of bids from the perspective of all business and technical aspects followed by the selection of a supplier. Based on completed questionnaire, quality management decides on the approval of the preliminary supplier. This activity is documented on the form "Supplier Approval Letter". Quality management determine the term of rating of the supplier by the evaluation of supplier - SAM (Supplier Assessment Monitor). This term is in principle fixed for a period of 12 months. When you next mutual meeting with potential suppliers, is together with the supplier filled the risk analysis.

Ordering of the test sample

Once quality management decides of the provisional approval of the supplier subsequent ordering of the test sample. The first sample should bring evidence that the contractor is able to meet the specific requirements of ZF Sachs Slovakia a.s. The first samples of products from suppliers are required in the case of:

- when the product is ordered for the first time,
- when changing the subcontractor at the supplier,
- when changing the product in all characters,
- when changing the drawing index,

- at blocking of supply,
- at the supply disruptions,
- when change in the manufacturing process,
- at the use of new / modified equipment,
- the customer requirements (e.g. annual interval the repeat of the first sample).

The first sample must be supplied principally with the report of test the first samples. Report on test of first samples must be delivered together with the samples. Of first samples must be delivered minimum 5 pieces. The supplier documents the detected real value in comparison with the desired values. The real values that do not meet the specified criteria shall be labeled and dissension shall be stated in the note. It also must be given data on causes of errors and the made measures for repair. For proper execution of the first sampling supplier is responsible. **"Without an approved first sample may not be exposed to the orders for delivery."** Parts manufactured according to STN, CSN, DIN, ISO, respectively other national standards and for which there is not a drawing, not subject to the test of the first sample.

4. EVALUATION OF SUPPLIERS

Achieve the objectives of quality ZF Sachs Slovakia a.s. is in the decisive extent influenced by the ability and performance of suppliers. For this reason it is absolutely essential evaluation of suppliers.

Evaluation of suppliers – SAM

For a complex evaluation of suppliers is used the concern valid assessment system SAM. Evaluation system gives the picture of the skills, abilities and partner behavior of suppliers.

Evaluation of suppliers must be carried out on all suppliers. Performance appraisal refers to the quality of the supplied products. In doing so, shall verify consistency between the products supplied and assignments (e.g. drawings). Evaluation is carried out using the defined questions in different criteria.

Evaluated are the following criteria:

- **Technology**
 - specific requirements for the product
 - performance in area of developing
 - sources
 - communication / cooperation
- **Quality**
 - the quality management system

- quality Planning
- communication / cooperation
- **The achieved performances in field of quality**
 - achieve the objectives set
- **Accuracy of supply**
 - fulfillment required deadlines and quantities
- **Logistics**
 - logistics system
 - performance in area of logistics
 - communication / cooperation
- **The Purchase**
 - price / costs / finance
 - an initiative towards cost reduction
 - the contract for the supplies
 - communication / cooperation

Fundamentally in the SAM evaluates:

- suppliers with framework contracts,
- suppliers with multi-annual contracts,
- suppliers with critical parts at high supplied volumes ,
- suppliers of assigned according to qualifications SAZUG to the group S or A.

After evaluating all criteria will take place classification of suppliers into groups.

A – supplier	90 – 100%
AB – supplier	80 – 90%
B – supplier	60 – 80%
C – supplier	< 60%

Class "A"

"A" supplier fulfills important prerequisites for long-term cooperation. Class "A" is an important prerequisite for the use of supplier for development projects.

Class "AB"

Evaluation corresponds of supplier "A", this classification however barring any use in case of development projects.

Class "B"

The supplier is still acceptable, but is necessary corrective measures.

Class "C"

The supplier evaluated "C" is unacceptable. The evaluation shows considerable shortcomings. With these suppliers company ZF Sachs Slovakia a.s. not conclude any long-term contracts.

In the classification of suppliers in groups 'B, C' are required by the corrective measures with deadlines. Corrective measures, it is necessary to define in the case that some of the criteria to be evaluated is rated below 80%. Responsible for monitoring corrective measures has a purchasing department. After improvements is made new evaluation.

For repeat evaluation must to observe the following deadlines, unless there are no reasons for an extension of deadline for the evaluation:

- A – supplier - every 2 year
- AB – supplier - every year
- B – supplier - after improvement, max. 1 year
- C – supplier - after improvement, max. 6 months.

Classification of suppliers by SAZUG

The supplier classification system - SAZUG serves as a strategic key on division for suppliers into groups according to their performance ability to respect the requirements of ZF. This division of suppliers is made possible within the ZF group for the single supplier management.

Using the criteria of classification key SAZUG, suppliers are divided into the relevant category:

S – strategic supplier

Partner, in which are concentrated and bound by needs.

A – approved supplier

With aim to become a strategic supplier. For each approved supplier should in principle be assigned the phase-out supplier.

Z – phase-out supplier

The supplier from which it does not order any new part. If it is withstand the economic, should be Z - suppliers systematically phase out.

U – unwanted supplier

The supplier is required for specific reasons; ZF does not want to develop and cannot be phase out (e.g. the customer requirement)

G – blocked supplier

For various reasons, blocked the supplier and not initiate an order no new parts from him.

Prerequisite for inclusion in the list of approved suppliers

Necessary condition for inclusion the supplier in the list of approved suppliers is a certified quality assurance system by a third party, i.e. accredited certification body. As a complement to the quality management system shall take into account the certification according to ISO 14001 or other EMS (Environmental Management Systems) accredited certification company.

The exclusion from the list of approved suppliers

The reasons for exempting of supplier from the list of approved suppliers:

- interruption of supply for more than one year, to restore supplies is necessary with this supplier to be treat as with the new supplier,
- long-term poor ratings performance in area of quality (more than 1 year)
- long-term poor ratings performance in area of reliability of supply,
- inclusion of a supplier in the category "C" in the reviews by SAM,
- withdrawal of the certificate of quality management from certification body.

CONCLUSION

Under the acquisition logistics is meant sum of logistical tasks and measures in preparing and implementing of procurement all material items strictly necessary to ensure the production or other activities of the company. It deals with all activities in the material flow of raw materials, auxiliary and manufacturing materials and purchased parts from shopping market in the input stock or directly to production (3).

In this paper we have pointed out on the processes of procurement production materials and semi-finished products in the company ZF SACHS Trnava a.s. The aim of this paper is to describe the process procurement production materials and semi-finished products, process of selection and evaluation of suppliers. Follows from the above described processes procurement of logistics in the company ZF Sachs Slovakia Trnava a.s. is possible to find that they are at a very high level.

Course of individual process was conducted based on information provided to the consultant of company and studying interior company materials.

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