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THE USAGE OF THE ACCOUNTING INFORMATION FOR THE ECONOMIC ANALYSIS OF THE SUPPLY PROCESS

Abstract

The main stages of the economic analysis of the supply process on theenterprise with the usage of accounting information are described. The oriented order of the analysis of contract relations with the material resources' suppliers concerning their feasibility, eurhythmy, timeliness of deliveries and correspondence to the raised requirements is conducted. The peculiarities of the analysis of enterprise's supply organization in general and by separate shops, sections, individual working places etc. are considered.

Key words:

Economic analysis, maintenance supply, economic analysis methods, productive supplies, contract conditions, order portfolio, quality, assortment.

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The problem definition and its connection with the most important scientific or practical tasks. One of the most important factors of production development is an enterprise's stable provision with material resources. With the transition to the market, the enterprise's system of supply with raw materials was completely changed. The zone of choice of counterparts for the raw materials market was essentially expended, enterprises takes into consideration the possibilities and expediency of creation of different inventories, correcting them on the change of the enterprise's conditions and inflation level. In the process of inventory level management on the enterprise, the range of quantitative methods of economic analysis is used, inasmuch as the level of the excised inventories may be one of the decisive factors of the enterprise successful operation. Expenditures connected with the sufficiently great number of inventories' preservation can reduce a profit to a minimum. Likewise, risk is closely connected with holding of the inventories at a sufficiently low level – as a consequence, the problem is evident: if the inventories are ended, it is impossible to complete customers' order. Consequently, it is necessary to find the compromise for those problems by means of analytical methods, referred to above article.

Analysis of the publications. S. V. Mnikh**,** S. Z. Moshenskyy, O. V. Oliinyk, H. I. Kindratska, A. H. Zahorodnii paid much attention on the question of supply process analysis, inasmuch as the situation in the process of production and realization depends on the efficiency of the mentioned process organization. Analysis of factors and reasons of supply and adoption of the corresponding managerial solutions enables to minimize the expenses of production hold-up. The source of such analysis is the accounting information of primary and reduced accounting.

The main objectives of the article:

- To define the sphere of economic analysis application in the accounting of process supply;
- To consider the stages of economic analysis of the process supply;
- To pay attention on the question of contract relations with suppliers concerning different parameters;
- To characterize the order of conducting of material and technical supply analysis according to assortment, eurhythmy, terms etc.

Statement of the topic examined. The reduction of the profit amounts, the growth of the losses' specific weight because of the excessive formation of inventories often emerges on the Ukrainian enterprises. The negative influence on the manufacturing structure activity is realized not only by external conditions (unstableness of the Ukrainian economic legislation, uncertainty of the priorities of the government management of the economy, availability of the political con-

vulsions and economic crisis etc.), and by internal ones. All these facts show the deficiencies in the managerial system both concerning enterprise in the whole and supply department in particular.

The effective coordination of the supply department work is provided by the inventory control system – through the traditional sphere of practical work, which began to develop as an independent direction at the beginning of the 20-s of the last century, which coursed the formation of the inventory theory in 50–60-s, which was oriented on inventory level optimization.

The inventory control system should be considered firstly as a problem of effective provision of the production process with the necessary material resources. On enterprise, the material support should be organized without failures in the production process because of sudden lack of material resources. Secondly, expenditures connected with purchase of inventories, expenditures connected with inventory preservation and expenditures on their moving between the productive subdivisions should be well-balanced, and the total value is minimized. Thirdly, the methods of inventories evaluation should provide the achievements of profitable indicators, from the enterprise's point of view.

We should admit that the detailed analysis of the enterprise's supply process with kinds of material resources is a hard work inasmuch as most of the enterprises used thousands, tens of thousands of material items, raw materials, parts, tools. It is impossible to analyze the implementation of plan concerning each item, type, size, brand and kind of values. Therefore, the detailed analysis is conducted most of all only in regard to those kinds of values, which define the growth and improvement of the enterprise, limit the enterprise activity and are especially unprofitable or progressive, economically profitable for enterprise.

To analyze the implementation of the plan of material supply and application of inventories, we use the information give below:

- Plan of material supply;
- order;
- specifications;
- contracts on material supply;
- statistical accounting;
- operation data of the department of supply concerning fulfillment of an agreement;
- accounting data on material spending on production and material stock availability in unfinished production;
- calculation of the separate products prime cost;
- source accounting documents etc.

To define if the enterprise is provided with material resources we should:

- study the order of calculation and substantiation of agreements on material resources supply, conditions of supply;
- define the character of inventories and changes in their structure;
- check the feasibility of inventory standards and need of material resources;
- work out measures for reducing above normalized and superfluous material inventories [1: 256].

In conditions of market economy all the productive activity is based on system of concluded contracts on product supply, the fulfillment of which is not only the warrant of enterprise financial stability but also the form of its high image. As it is known, the liabilities on contract of products' delivery for the enterprises of Ukraine are fulfill according to the government orders, government and direct contracts.

Government orders show the state demands in products' delivery for the satisfaction of the social needs in speed-up of research and technology progress. Ministries and administrations define the amount and composition of the government orders, which respond for the provision of material and technical resources important material and technical resources for the enterprises and solution of questions on merchandising of products, manufactured in accordance with government orders.

Unlike the government order, government contract shows the need of product delivery for the state, but enterprise's product release is financed by the state budget.

The direct contracts of delivery are the most progressive form of enterprise-producers and wholesale establishments' delivery for the consumers. The question is about the industrial associations, enterprises, organizations, producers and consumers.

In the course of analysis, the indicators of the development of direct links with suppliers are studied:

- The relation of the number of direct suppliers to the number of all suppliers;
- Specific weight of material values, which arrive due to the direct supply into their general income.

On conditions when the ratio of government orders is declined and the level of enterprise's independence in formation of the order portfolio arises, the responsibility of work collectives for the distinct fulfillment of their liabilities significantly rises. Nowadays, there is a risk for merchandising of production for the

enterprises, the image of which did nit becomes the warrant of high quality and competitiveness.

The chief goal of the economic analysis of feasibility and fulfillment of delivery contracts is the provision of complete and timely fulfillment of contracts on the most profitable economic conditions. Such analysis can be conducted, using the book of record of delivery contracts, where the information of every supplier of material resources is accumulated. Such a book is not strictly regimented; consequently, it should include the exclusive information about every mentioned supplier.

The complex of tasks for the fulfillment of the delivery contracts includes:

a) analysis of feasibility and effectiveness of formation of order portfolio;

b) analysis of filling of orders subject to assortment of the produced goods;

c) analysis of filling of orders in accordance with quality of the produced goods;

d) analysis of filling of orders on products delivery in the certain time;

e) analysis of results of fulfillments of orders on products delivery [1: 267].

We should take into consideration that the fulfillment of liabilities on products delivery is closely connected with production and realization of products.

The fulfillment of contractual liabilities and its financial and economic effectiveness depends on many factors. The main of them are:

The distinct coherence concerning terms, volumes, quality, assortment of products, material and technical provision of enterprise, its organization and possibilities of products transportation;

- The absence of correction of tasks concerning output and realization of products;
- Coordinated work inside producing departments;
- Distinct accounting, control and analysis;
- System of economic stimulation and confirmation [1: 269].

The pioneering stage of the analysis is the evaluation of the feasibility and tension of contractual commitments, when it is necessary to evaluate the already formed order portfolio, taking into consideration that because of market competitiveness, the contracts on the most profitable orders for enterprises were not concluded.

While the evaluation of deliveries tension, the actual fulfillment of the contractual commitments are considered. The coefficient of tension of the products delivery is calculated by means of correlation of the volume of the needed prod-

ucts delivery in accordance with concluded contracts or actually represented during the analyzed period to the amount of the enterprise productive capacity.

To analyze the losses from the market competitiveness it is necessary to compare actual and desired order portfolio, towards the usage of the productive capacity and financial and economic effectiveness. At the same time, not only the absolute comparisons of the amount of portfolio and productive capacity are the confirmation of the contracts' feasibility. Frequently, their non-fulfillment is stipulated by the inequality of the contracts arrangement in accordance with the possibilities of usage of the enterprise productive capacity.

Enterprises, which form the enterprise and products delivery commensurability in times, have the better financial results as a consequence of acceleration of the turnover of capital.

Analysis of the fulfillment of the contract commitments is conducted in some stages:

- the general evaluation of the fulfillment of commitments in general and accrual from the beginning of the year;
- analysis of fulfillment according to the separate groups of products in correspondence with the government order and direct contracts;
- fulfillment of the contractual liabilities concerning assortment, quality and terms of products supply [1: 271].

Special attention should be paid on the level of the fulfillment of the contractual liabilities in relation to the assortment, quality and terms of products supply, in fact, the contract is implemented, if all conditions of supply are maintained. Such analysis can be conducted using the coefficient of evaluation of the level of liabilities' fulfillment in accordance with the assortment *Кас*, conditioned quality *Кяк* and terms *Ктерм*. The level of contractual liabilities fulfillment is defined by means of correlation between the volumes of the actual delivery, not more than it is noticed in the contract, and the amount of the contractual liabilities.

The workers of the department of the material and technical supply, together with the worker of the corresponding services (laboratories) conduct the analysis of the material quality while their arrival to the enterprise, in other words, they check their correspondence to the standards, technical and contractual conditions.

The analogical methodology is used here. To evaluate the contractual liabilities on products supply we can apply a composite indicator, which is defined as productive fulfillment of the separate indicators of the contractual liabilities on assortment, quality and terms. At that, it is necessary to coordinate those indicators between each other. It means that in the analysis of the assortment liabilities fulfillment, it is necessary to take into account only that ratio of products, which was delivered in time, the ratio of products corresponding to the quality,

should be defined according to the products, which respond for the fulfillment of the liabilities on assortment.

Analysis of the material resources quality is conducted according to:

- acceptance protocol;
- reclamation on material resources;
- claims to the suppliers;
- act on complete or partial production fault;
- standards;
- specifications of passports and technical conditions on the corresponding material resources;
- results of the performed researches of the material resources quality by the expertise bureau or laboratories.

At that, raw materials and materials, which compose the basis of products of the enterprise. Inventories are considered as a part of material resources, which did not take part in the production process, but their availability on the enterprise in the prescribed size is the condition of productive work.

Analysis of the terms and volumes of material supply on concluded contracts is connected with the inventories checking of the corresponding materials on the storages. That analysis is performed according to the inventory check acts or on the base of the data of the perpetual inventory card of the corresponding materials. At that, the existed inventories should cover requirements of the enterprise in materials for the period of intervals between deliveries.

Provision (minimum reserve) of the days equals to:

$$Зmin = Но : Дп, \quad (1)$$

where *Но* – reserve of the one or another material type;

Дп – material daily requirement.

This calculation enables to define the amount of reserve of the separate material types on the storage for a day. Intervals between the actual arrival of the material on the storage and intervals of the deliveries according to the contracts with suppliers.

During analysis, the production growth of the separate kinds of products and actual inventories, the growth of absolute inventories and the growth of their need per day are compared. Then, it is defined what conjuncture was composed on the Commodity Exchange and what possibilities of the acquirement of the material supplementary quantity can be?

The definition of needs and provision of the material resources proper use is closely connected with their standardization.

Standard – is the task, which fixes the marginal acceptable value of expenses of the certain material resource for the production of the product unit or unit of work performance. The standard of expenses includes material resources for the direct fulfillment of the production technological process or works with the consideration of technological wastes of materials and expenses conditioned by the acceptable technology.

Standards are defined per unit of product. They should consider the improvement in the quality of production, its competitiveness and progression of the new types of products. Progressive standard is a standard, based on advanced technological methods, new technique and production organization, and provided less unit cost than in previous period. Standards should depict the main trends of the technological process. In the same time, progressive standards are the factor, which promote the technological process.

The situation of the standard base in the production does not correspond to the requirements of the raising of productive efficiency. Most of standards are defined according to the actual costs for the previous period or analogically. Therefore, in practice, there are old and overstated cost standards, which are not oriented on the reaching of the best results and can be a source of abuses.

The revelation of deviations of the actual costs from such standards does not show the real costs of material resources or change of materials-output ratio.

Therefore, to analyze the feasibility of the standard costs we compare:

- the current standards of the operating enterprise and actual costs with average branch;
- current standards on comparing products with the standards of the last year relative materials-output ratio of new and old products;
- actual costs with current standards.

After studying the plan of fulfillment of contractual liabilities on material and technical supply and evaluation of its quality, it is necessary to analyze the trends and results of supply plan implementation in order to study and evaluate:

- actual arrival of material resources according to the general volume, structure, composition, assortment and quality;
- timeliness, rates and eurhythmy of supply;
- arrival of material values according to sources;
- organization and movement of provision of the needed resources for all branches of enterprise;
- influence of the factors of material and technical supply on the deviations of flow of output volumes.

The level of implementation of plan on separate kinds of raw materials, firewood, materials is calculated both from natural and measuring rod of money.

First of all, it is necessary to analyze the actual provision of the enterprise with material resources. For this purpose, the actual arrival of materials from suppliers and from internal sources is compared with the need of enterprise with the consideration of surpluses in unfinished production; the coefficient of provision is defined.

A great importance in the process of analysis should be paid on the question of provision of needs in material resources by the sources of covering and provision. There are two types of sources of needs covering:

- internal: expected surpluses of materials with the consideration of the unfinished production for the beginning of the analyzed period; reverse waste materials; own production of material resources; saving while transportation, preservation, implementation of the new technological developments etc.
- external: material resources, arrived from suppliers, in accordance with concluded contracts.

The amount of the sources of the needs covering = amount of the internal sources of needs covering in every kind of material resources + amount of external sources of needs covering in every kind of material resources

Consequently, to analyze the provision with material resources, we should define:

$$\%\,provision\ of\ mat.\ resourcer = \frac{internal\ sourcer\ of\ needs\ covering + receipt\ from\ a\ supply}{planned\ need\ in\ material\ resources} \times 100\% \quad (2)$$

$$index\ of\ implementation\ of\ agreements = \frac{receipt\ from\ a\ supply}{quentitu\ of\ agreements} \times 100\% \quad (3)$$

Besides it, we should define:

$$index\ of\ needs\ satisfaction = \frac{quentitu\ of\ agreements}{planned\ need\ in\ material\ resources} \times 100\% \quad (4)$$

Satisfaction of the enterprise needs in material resources is carried out in two ways: extensive (which foresee the increase of obtainment and production of material resources and is connected with additional costs, which lead to the growth of specific weight of material resources; at that, the primecost can be reduced) [2: 340].

For the effective enterprise's work, the evaluation of the commeneurability of supply is very important, in other words, the analysis of the plan of fulfillment concerning structure. The evaluation of the fulfillment of the plan on this indicator

is carried out by means of the comparison method of actual specific weight of the separate types of materials and planning one.

During the analysis of the supply process it is necessary to pay attention on the situation of the stockholding of raw materials and materials in composition and structure. Analysis of the composition and structure of material resources enables to define what deficit and expensive materials are used by the enterprise, the usage of what materials is dominated in the enterprise or is the product raw material intensive? For that purpose, it is important to calculate the following indicators: the share of material costs in the general costs on production; the share of the individual types of material resources in their general value; the share of the material costs on production of the individual goods in the general value and its change for the analyzed period [3: 206].

In other words, the implementation of the productive program, in particular, output of products according to nomenclature and assortment considerably depends on the level of fulfillment of the plan of supply not only according to the volume but also according to the assortment of material resources. Therefore, during analysis, the evaluation of the fulfillment of the plan of material and technical supply on assortment is given; the coefficient of assortment is defined.

The coefficient of assortment is defined by the correlation of amount, counted to the fulfillment of the plan on assortment to the planned requirement.

It is important to evaluate the completeness of supply. It is defined by the ratio of components of the complex (knot, part of product, composition) to the comprising knots, compositions, parts which arrived and then, the number of those complexes is compared with the number of end products, which were planned before the output.

Analysis of material and technical supply provides the evaluation of the arrival of resources on terms and eurhythmy of supply. This is important with the consideration that the nonobservance of time of supply leads to the unfulfillment of production plans and products realization. In the world practice, there are some methods of material resources delivery, which provide the most effective supply of production by the subjects of labour (as a particular, method «just in time», offered by the company «Toyota» in early 80-s). It is based on the disposal of any inventories on the storages, in any time, there are not «free» inventories, but also those, which are necessary for the ending of the production of the given goods. At that method, the eurhythmy supplies of materials, raw materials, firewood are provided. Besides it, R. Tomas offers such methods of supplies, in particular describes the model of the optimum batch quantity, which is used to evaluate the volume of order for the definite productive supplies, which provides the minimization of the general value of inventories. Nevertheless, such model requires such conditions: permanence of the demand on the finished goods, it is supposed that the delivery will be without check, permanence of the purchase price, planning model of material needs (it is used when the production of the finished products is in process of production in several stages). While using this method, the level of inventories and raw materials is analyzed. If there is

a demand on finished product, we can forecast the needs, connected with the production of that product [4: 251].

It is efficient to analyze the rates of supply. For this purpose, the actual arrivals of material resources are showed according to the accrued method.

Analysis of the material and technical supply is performed not only in enterprises but also in the separate departments, sections work places. The aim of such analysis is to study the organization and duration of material resources provision of all lines of enterprise. At that, the forms, sources, volumes, timeliness, completeness of the provision of corresponding subdivisions with raw materials, semi-finished products, tools, service parts, uniform, equipment.

Such analysis is conducted mainly by the procedure of, which is mentioned above. But there are some peculiarities of the analysis of organization of sections and workshops supply, in particular, studying of the order supply with material values. In the process of analysis it is studied:

- form of material supply, if there is a demand for them or by means of material delivery into the shops or working areas according to the production schedule scaled before.
- method of limiting of materials delivery and documentation of the delivery (limit cards, resource limit cards);
- plans of the separate shops supply (their feasibility and coherence with the enterprise plans; the availability of planning and depiction of the transitive inventories of the material values in the plans of supply);
- sources of supply (corresponding services and subdivisions of the enterprise, which are responsible for the material support of one or another shop or section, in particular: the department of the material and technical support, tool supply department, central tool crib, tool shop, storeroom etc.).

In general, the analysis of the implementation of material and technical supply plan on volume, assortment, quality, terms of the values arrival, provides the showing up of the reasons of deviations from the plan of development of measures on full and timely supply of shops, sections, working places with high quality material resources [5: 195–202].

In the closing stage, we should estimate the lost production because of:

1) low quality of materials;

2) substitution of materials;

3) change of price on materials;

4) downtimes, because of disruption of the schedule of deliveries;

5) incompletely supply of materials.

For that purpose, the guilty persons and reasons of the deviations from the plan of full and timely support of the enterprise with quality material resources are studied. In consequence of analysis, the charges to the guilty persons are formally established, the measures for timely support of enterprise with necessary high quality material resources. The analysis of the non-fulfillment of the contractual liabilities on deliveries considers also finding of guilty person in the internally productive subdivisions and influence of external factors.

Presence or absence of downtimes because of raw materials shortage is the essential indicator of supply equability. But it is necessary to find out the reason of downtimes – the absence of materials and raw materials on the storage or untimely delivery of them on the working places.

If we analyze the reasons of the non-fulfillment of contractual liabilities we observe the guilty persons and reasons of non-fulfillment of the contracts on material deliveries separately for suppliers. Violation of delivery time leads to the non-fulfillment of the business plan and realization of the finished products. In the process of analysis the downtime is defined, the measures of delivery implementation are determined.

Conclusions. We can make a conclusion that successful operation of the enterprise is possible in course of timely and qualitative provision of enterprise with raw materials, productive supplies, firewood, tools, replacements and its effective usage. While taking the managerial solutions on productive supplies, special attention is paid to the analysis of the process of material and technical supply and its coherence with the business plan, implementation of the plan on productive supplies on volumes, assortment, completeness, and delivery terms.

Considering the process of supply, which is the essential part of the enterprise capital cycle, it is necessary to pay attention on the analysis of its components. Concluded agreements and contracts are one of the conditions of timely delivery of material values. Therefore, the right and timely determination of the purchase amounts and availability of the balanced system of links with suppliers is the guarantee of the process prosperity. Information, concerning arrival of the productive supplies into the enterprise is the source of the analysis of fulfillment of an agreement on delivery. For that purpose, the workers of the department of material and technical supply together with the corresponding laboratories make inspection during their arrival.

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