

LOGISTIC CONTROLLING IN PRODUCTION ENTERPRISE

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Summary: Taxonomy of contemporary logistic requires from the enterprise the improvement of business processes and the introduction of new principles of functioning. Such an element is controlling in strategic and operational conceptualization which allows to present tools needed to correct functioning of the work. The main aim of this article is to present the controlling aspect in logistic conceptualization, through presenting a few methods with the reference to production and finances.

Key words: logistic controlling, financial controlling, management of production.

1. Introduction

The creation of suitable information system which will contribute management in the enterprise should demand embracement of all spheres of its activity. Theoretical conception assigned, separate systems, such as accountancy, logistics and controlling should lead to integration of mutual links and tasks. Logistic controlling is intended to support realization of logistic processes and contribute to increase and solidify the contribution of logistic in market success of the enterprise. It encompasses of its scope not only the cost of functioning logistic departments, but primarily it supervise and steer the effectiveness of the whole flow sphere of goods and services in the enterprise. Controlling perform its coordination function in the gage of undertaking decisions (management), which allows the adequate realization of logistic processes conditioned temporarily- spatial doing of business activity. The creation of the idea of controlling is an effect of development processes of the science and practice of management also widely understood accountancy in management procedures. At present controlling is a modern management tool which allows the enterprises to improve their functionality in changeable environmental conditions [1]. It depends on the holistic and complex attitude to the enterprise so as to detect bottlenecks; to work down the solutions of its elimination as well as (if there will be deviations in relation to the plan) propose rectifying activities, with simultaneous assurance of enterprise profitability. It can embrace different levels of management (strategic, operational) and functions (research and development, projects, logistic, production, marketing etc.). In the enterprise controlling is intended to participate in the determining the goals by the management and to coordinate activities inside the enterprise in attempt to enable the achievement of determined goals. Controlling uses the information which comes from the accountancy system. Throughout this system we can evaluate the effects of undertaken decisions (the compliance of plans with its results) and identify the causes of possible discrepancies. So this is the manoeuvring of enterprise activity oriented on the determined goals [6]. In compliance with adopted management philosophy, the application of controlling tools is taking place accordingly to the sequence: planning- record of virtual data- analysis of deviations- revision of planning. The base for controlling is (and must be)

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efficient information system. Only then it is possible to efficient requirement of the data, to process the information and to communicate with all the recipients of those information's. When we will add pin down of goals in countable way (success measures) and communication of goals through the plans (when and in what range the realization of goals follows), at that time it can be asserted that managerial staff (driver) receive the clear instruction of action, and what is more important, the recording of real enterprise functionality [11]. It is adopted that controlling is a method of complex and coordinated management of enterprise, which indemnify the rationality of formulating and realization of its goals.

2. Controlling in production management

Controlling in the area of production management include the economical manoeuvring of production, understood as affection in direct and immediate way on the shape on the range- quantitative structure of production and on its course in the time and space for assuring the most profitable in given circumstances the realization of the economical tasks of the enterprise.

Controlling in production management is oriented on the controlling of the profit (operational result). The subjects of controlling in production sphere are primarily the components of operational result of production activity, i.e. elements (compositions) of incomes and costs, depended on the decisions of production management. In current control of production processes we use additional system of technical-economic indicators (productivity, quality, the condition of material and ready works reserves, time of production cycle, deadlines and costs of deliveries etc.). On the grounds of the fact that all decisions are undertaken by adequate regarding of the decision problem production manager (production chief, department manager, supervisor), to him the auditor also has to portray the fallouts of different possibilities of the solution of a given problem or the exceed of set up tolerance borders [7].

Provided that production management can in short periods wend in different situations, not necessarily economical criteria's, in as far as the imperative task of auditor is always solicitude for long term realization of enterprise economic target.

By looking into the controlling of production in integrated conceptualization logistic is mainly taken into consideration. It should assure, that needed in production raw materials, stuff and ready products are ready to distribute in adequate time, in appropriate place in needed quantity and congruent quality. Logistic follows accordingly the whole goods stream from the suppliers through enterprise to the customers. With reference to basic activities of logistic we have to ascertain their basis of content coincidence with the tasks of steerage of production, primarily in the range of: planning the demand for materials, balancing the need for production capacity with its supply and steering the level of stock of final goods.

One of the crucial tasks of controlling in logistic production management is the analysis of the quantity of orders for products of the enterprise. During this analysis at first orders are divided according to determined size rows. Afterwards the number of orders and potential revenues from sales are determined for individual size rows. The success of the enterprise extensively depends on the structures of orders size. If there is lack of adequate policy in this area, difficulties in sale of final goods will mount. Moreover too much

amount of small orders cause the minimization of revenues, augmentation of costs, diminution of cover mark up and lower financial outcome. Small orders also comprise burden for whole production process. The productivity decline as a consequence of frequent switching of machines, problem with promptness of realization of deliveries may also occur. The assessment of range and size of orders is becoming the main task of controlling, afterwards formulation of system which will reduce small orders and establishment of plan of activities which will improve the structure of jobs in the future. Thanks to limitation of number of small orders, sales department may worry about new, more viable orders [8].

With a size orders analysis reserves controlling is strongly correlated, as well as materials used for production and final goods. Establishing the amount of ordered raw materials depend on: materials demand from production, constraints of storage and the situation on supply market. Steerage of the level of reserves concentrate on evaluation of economic, optimal size of order given mean of production, whose stockpiling will cost the same as the purchases of all sets of this mean, sufficient to fulfil all production within a year. We have to take account of the fact that costs of the purchase decrease with the size of purchases and costs of storage are in direct proportion to the size of purchases. Optimal size of orders is evaluated by the increase of storage costs and decrease of purchase costs. To calculate the economic order quantity (EWZ) we used the following formula [10]:

$$EWZ = \sqrt{\frac{2 \cdot R \cdot S}{C}} \quad (1)$$

where:

R- annual demand quantity,

S- fixed cost per order,

C- carrying cost per unit for the duration of the lead time.

Moreover the economic size of orders allows to determine the choice of appropriate moment for order placement. The enterprise should always keep the certain level of minimal stock, which reduces the risk of limitations and troubles with promptness in materials deliveries.

The same tools of production controlling are used toward the stock of final goods. Starting point in this case is to determine the optimal size of production lot, for which costs of production and storage are limited. Effective controlling system should consider the following assumptions:

- filling of warehouses is taking place successively, according to the production plan;
- the production plan require the connection with the assessment of demand for products and its changeability;
- steering of production require the quality control in order to limitation the complaint and potential losses in the storage time; production powers are adjusted to the potential quantity of orders from the customers [2].

The last from the above assumption indicate that elements of controlling in the range of production cannot concentrate only on steering of production in the time of enduring of production cycle. By the length of production cycle we understand the time from the

moment of purchase materials needed for production to draw the final good at customer's disposal. The assessment of directions and ways of sale the final goods is getting needful, which include in its range the control of dynamics the growth in selling previous and new introduced assortment, the analysis of customer tastes and the assessment of market segment in which enterprise is operating. The controlling in the marketing sphere is dealing with it.

Commonly distinguished elements of sales controlling are:

- analysis of trade areas,
- penetration of the market,
- control of sale the particular assortments of production,
- control of effects of running the cell of sale and acquisition,
- the analysis of customers,
- the control of marketing costs [3].

The analysis of trade areas has to embrace the recurring assessments of sale results in particular market segments, the quantity and quality of sold products in the range conceptualization. The market segment is a group of clients individualize on the basis of set up criterion: geographical, demographical, advantages they have from the product acquisition. Such a system has to allow the fast reaction for unpredictable changes in the common trade requirements (for example the change of exchange rates, duties and taxes). Set up standards in this area should ensure the improvement of sales results due to:

- the increase of expenses for promotion of particular goods,
- the changes of price policy and usage of releases and discounts,
- hiring more solicitors, dealers, commission agents etc.,
- the increase of commitment of particulars agents, for example through the change of salary system.

The main aim of controlling in the penetration of market sphere is to set up the compositions of procedures of assessment the share of the enterprise in the given market segment, ascertain the significance and strength of competitors and dependency changes on the market from marketing activities of the enterprise.

The control of sale of particular assortment of production is also exquisitely substantial, because nowadays almost every day new products appears, the possession of data which show the level (and dynamics) of sale of particular goods give the possibility to track the changes in demands and tastes of customers. Obtainment of such information's is not always possible, but it is always pricy. That is why in sales controlling only data which consider those products, from which the enterprise has the maximum profits and (or), which percentage share in the whole sale is the biggest is considered. One of the control manners is regularly juxtaposition the result of particular assortments sale, recon its percentage shares in the entirety sale and reference the results to previous durations. The obtained results shows the production planning and establishing the substitution of one's assortment for the one more suitable for client's needs.

Controlling also embrace the control of effects of the operation of sales cell and acquisition. A good controlling system also has to embrace the checking of the operation effectiveness of individual workers from sales area. In many enterprises periodic reports from work effects are used. The most often they donned the form of blanks, in which it is

comparing the value of sales for conducting by a given person area of activity with its costs. For these last one consist mainly: cost of performed phone calls and telefax connections, costs of promotion and contact with potential clients, costs of business trips and representative spending. In report there also should take place the assessments of future trade conditions with a budget estimate of the costs of acquisitions, correlated with the analysis of market potential on the given area.

The control of marketing costs is one of the most important benchmark activity on the market. In the collation made to that end it is easy to fish out those products or clients on which fall the significant percentage of sale, as well as marketing outlays. The current comparison of those quantities may reveal the unprofitability of interest in some products or recipients. In short period such a situation may be the consequence of purposeful activities of the board of directors/management, for example in the time of promotion of new product or when the company entering the new outlet. However in the longer period of time all marketing costs have to be covered. That is why, steering of marketing activities is directed on those products and clients, who will compensate the endure organisational effort as largest profits. The share of marketing cost may be done due to the criterion of area of operation of product, clients or distribution channel. Establishment, and then control of those cost is particularly difficult in the case of diverse, multi trade production.

3. Controlling in financial aspect

Programs of operating, planned and undertaken for the target realization in the scope of growth of development and profit cannot concentrate only on operational processes (practical sphere). Their efficient, uncluttered course need a solution for concatenation of additional problems from the scope of financial economy, related inter alia with the determination of [11]:

- the demand for funds essential for achievement the set up targets,
- the moment of parlaying those funds for disposal,
- the costs associated with different methods of funding the organization activity,
- the ways for reduction the current costs of enterprise operation,
- the line of actions and profitability of investment of garnered capital,
- the ways for reconciliation of requirements in the field of financial profitability and liquidity [12].

It comes from the fact that financial controlling is concentrated on accumulation of capitals needed to finance the organization functionality and on its appropriate apportionment, to assure its survival and development. Financial controlling comes out far from the sphere of indirect activities of financial and accountancy workers. The role of basic instrument of financial management completes the budgeting concept.

The swift test is the method of assessment the condition of the enterprise through four following indicators [10]:

1. The share of equity capital Ukw in the assets (self-funding indicator):

$$Ukw = \text{equity capital} / \text{assets} \times 100 [\%] \quad (2)$$

2. The share of Uz profit and amortization in the revenues (revenue profitability indicator):

$$Uz = \text{gross profit} + \text{amortisation} / \text{revenues} \times 100[\%] \quad (3)$$

3. Profitability of assets Za:

$$Za = \text{gross profit} + \text{interest from the asset credit} / \text{assets} \times 100[\%] \quad (4)$$

4. Independents in year Zd:

$$Zd = (\text{foreign capital-funds with short range securities}) / (\text{annual sum of gross profit} + \text{amortisation}) \quad (5)$$

Budgeting make up the financial standard for particular undertakings, the kinds of activities and departments (branches) in the organization. It is expressed in numbers plan for certain time in the future. It is even said that budgets are “encashed” of the plans. Through number designation of future activities and fragmentation of it into the parts according to the organizational structure, budgets linked the planning and controlling function. In the other words, number presentations of plans impose some kind of order, which enable for managers to orientate on which capitals and by whom they will be spend and where and what costs, revenues from sale or natural investments and spending entities correlate with his/her plans. We can distinguish several basic kinds of budgets: sales and cots, capital spending, cashed and balances which hark back to controlling tasks what presents the Table I.

- budget of variable costs, in which spending fluctuate together with planned changes in the sizes of sale and production.
- budget of fixed costs, covering the spending remained on relatively constant level, regardless of the size of sale and production.

Table I.

The tasks of financial controlling

The tasks of financial controlling	Goal
initialise and support for chief management	the search and optimal usage of future strategic potentials of the enterprise
providing of adequate information about environment,	enterprise and the scope of use of particular instruments and structuring of strategic processes
the supervision of process of strategic control	performance of analysis, laying down of counteracts and mold of strategic system of reporting
security and supervision of implementation of the strategy	including mainly connection and coordination with operational controlling

Source: Own elaboration

The effect for lineage the data from revenue budget and costs is profit and loss account pro forma. It is a report which shows the planned for given period difference between the revenues and the costs of obtaining those revenues, so the value of profit (revenue) or loss. The essential instrument of financial controlling which combine the budget of profit and loss is the analysis of break- even, comprising the neuralgic element of steering the profit. This analysis allows to determine, such an amount of revenue will be made, which allow to fully cover the fixed costs of the enterprise. This moment is named as a break-even, because after its achievement all extra values from sales create a profit. In the easiest standard from the analysis of the break- even need to enrol certain assumptions. The basic condition is the possibility to make the division of total costs onto two parts: fixed costs and variable costs.

Every invested enterprise, considering the purpose of involvement of capital, went into the possibility of extensions of its estate. The information about the effectiveness of investment undertaking is provide by the net present value (NPV) the stream of future revenues, where the revenue is equate with financial surplus [9].

The detailed budget of the operation of involved capital is diversified depending on the payments date of interest, instalments of capital and dividends and the manner of calculating the interests.

The information about possibility of producing the financial surplus from one venture is not enough to undertake the investment decision. About a choice should then decide the effectiveness of each of examined options. The gauge of effectiveness of the venture can be: the present new worth of financial surplus, internal return of investments outlays, return of investments and the period of reimbursement of investment outlay [10].

The cash budget is the forecast of financial revenues and spending, with whom the actual occurrences are compared. The disposal of cash is really essential for efficient steering of the enterprise. It ensures the maintenance of financial liquidity.

The possibility for covering the commitments in the moment of its payment is the need of primary importance and even the best profits will not do much, if they are retained in the hard tradable or excessive reserves, tangible assets and other assets which are not easy to fluidize. The cash budgets show also the excess of financial means in relation to the needs, enabling thereby the planning of profitable investments through involvement of those means.

Balance budget forecast the condition of assets (wealth) and capitals (liabilities) in given moment of time in the future. It is always named as a pro forma balance. On the grounds of the fact that changes in balance positions results from every kind of different budgets balance budget control the precision of all other forecasts and plans [7].

Beyond the balance budget, which predict the condition of the enterprise in stock and barrel, many positions may be budgeted more specified. Beyond the cash and capitals investments, widely used are also budget of colleting the debts and regulating the invoices (payment dues).

To sum up the essence and direction of usage of budget conception in financial controlling we have to remember that all budgets are presented to the managers who conduct a given operation, before the control stage is started. In conclusion for the period in which given budget was in operation is report about the discrepancy. It provide the data about planned and obtained in actuality results. It also portray the scope of each shown

deviation. The main task of a person responsible for controlling in the organization is adjustment of adequate revision before or after the end of given operational stage [5].

Budgets should be used only when they support the planning and control. Some budgets are so specified and comprehensive that they become not much flexible. To avoid that, many organizations use flexible, multi-options budgets specified on given period (for example quarterly). They are named as variable budgets. They are presented as sets of forecast, in which everyone is addicted to the different level of size of sale or production. At exploitation of current control for different periods other budgets are chosen.

As part of financial controlling there are many off-budgets control tools, although some of them can entail with and be used together with budget control. To the key priorities belongs indicate financial analysis by which there are controlling, and then set up the future level of financial liquidity, profitability and the effectivity of operation and indebtedness of the enterprise.

The financial analysis is a very useful tool to obtain the information about the financial condition of the enterprise. It is the amplification of the introductory financial reports (balance and the outturn account) and it has the character of the following control [4]. The financial indicators control the different aspects of company's operation.

Thanks to the relatively conceptualization they allow to make the comparisons not only in relation to the plans or results of operations obtained in previous periods, but also in relation to other enterprises operating in given sector.

How good organized control system should look like. Primarily it has to be orientated for assurance the realization of company's targets, it is only a mean, not a value "in and of itself". That is why it should assure the management and other participants of the organization the adequate amount of upright information about the supplies and processes which proceed in the enterprise. It has to reveal quickly all the threads and deviations from the established standards. It is hard to image the fulfilment of those demands without the acceptance of control system by the organization members. In the case of its lack maintenance it in the comparable efficiency will require disproportionately bigger investments, and a low cost of control is one of the basic advantage, which a control system should have [10].

4. Summary

The location of controlling area in the enterprises structures requires the flexible approach. Structures of such enterprises should be analysed mainly by paying special attention to their vulnerability for coordination and the possibility for elaboration of adequate attitudes toward environment changes. We should remind here, that vertical coordination which rely on the hierarchy inside organization is used in the subsidiaries of international enterprises operating in the environments with low uncertainty. Horizontal coordination realized through meeting, tasks groups (projects) need more time, but indemnify higher effectiveness of the usage of resources and achievement of synergistic effects. The immediate goal of coordination function of controlling should be reducing of the barriers performed between individuals subsidiaries of the international enterprise and between the the headquarter. These are the most frequently berries comes from the information blocks- disinformation, opaque organizational cultures and unfamiliarity of values and goals of an enterprise as a whole [11]. Paring of those barriers take place

through formulating the sizeable number of rules and procedures concerned the mutual cooperation among the branches of the international enterprise and a central and the flow of financial information.

The relevance of usage of controlling for effective management of the contemporary organization is undisputed, even though its implementation in Polish enterprises still does not take place without obstacles. Its implementation should give a positive image of effects in such issues as its efficient functioning and the company development, systematic improvement of the financial indicators and the participation of all organizational cell within the realization of controlling activities. Again in the financial sphere, so in the most measurable, to the biggest positives we can doubtlessly count among: increase of profitability, depletion of costs of the operation or the improvement of the financial liquidity. Improvement of information flow is also classified for the positive effects of implementation of controlling, especially nowadays, when we are becoming the informational society, and information it treated as a strategic value in the enterprise.

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