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## **MANAGEMENT OF FINANCIAL RESULTS OF THE ORGANIZATION BY USING MANAGEMENT ACCOUNTING TECHNIQUES**

### **Abstract:**

The purpose of this article is to analyze methods of management accounting and their impact on the financial results of the company. In flexible manufacturing systems, the information required for management must be obtained in a short time and with minimal costs. We studied in more detail both in theoretical and practical terms, method of management accounting on the basis of the theory of constraints (throughput accounting, TA), shows its historical aspects, principles and methods, methods of calculation of financial results of the company based on it. The main difference of TA method from traditional methods of management accounting is the direction offset from a focus on costs to assessing the value of generating money (throughput).

Throughput accounting is designed to solve wide range of problems, through the use of information about the inputs and outputs of the system. Clearly defined information system will enable managers to make informed management decisions in the areas of production, promotion of products (works, services), pricing and others. The article outlines the problem of determining the Throughput rate of the product and the company as a whole and their solutions.

### **Keywords:**

financial results, management accounting, costs, throughput accounting, theory of constraints

**JEL Classification:** M41, M40, M49

## Introduction

The development of services of economy, reinforcement of institutional commencements, competitive throughput, activation of the institutional capital, globalization, increase of the openness of informational resources are the main trends of economic development nowadays. The world economy has already entered the 6th economic or technological mode (similar to Kondratyev's cycles). The sixth economic mode is associated with the development of flexible industrial systems and robotics (2015-2025 y.y.); further development and production will be initiated on the base of these technologies. Existing productions also need refocusing on flexible production systems which can be adapted to changing demands of the consumer.

The management subsystems and information, which are required for management, are necessary for flexible manufacturing systems. However, the information should be also obtained in short time. Methods of management accounting allow to compare the information of the internal and external factors which affect future development of the enterprise. . There is lots of management accounting methods used by companies, but not all of them meet the requirements of modern management and production process.

## Materials and Methods

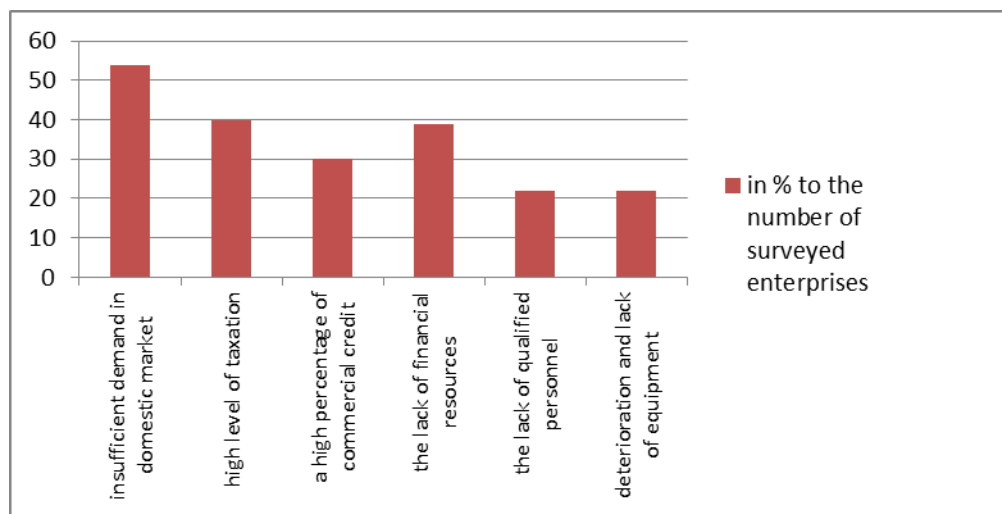
The main drawbacks of traditional management accounting systems were stated by Robert Kaplan and Thomas Jones in the book "*Relevance Lost: the Rise and Fall of Management Accounting*" (Kaplan, 1987, p 34). Traditional cost accounting methods have been used as powerful tools for reducing and managing costs for a long time. But none of the methods paid attention to the enterprise's income management, although income management, in our opinion, is as important as cost management. The system of allocation of indirect costs is not always optimal for management decision-making moreover the limitation of its activities to achieve the enterprise's aims is not considered in traditional methods.

The achievement of optimal effectiveness of enterprise's subdivisions and its financial results is the primary task of managers and their subordinates in these approaches. Errors are possible in planning and loading of manufacturing resources, as well as decision-making about production on these resources of products, if analysis of constraints, and also without considering overall aim of the enterprise as the goal of its own subdivision, is neglected. Thus, there is a need for an alternative approach in management accounting in order to reduce the negative consequences

which can be the result of using existing methods of management accounting.

The statistically verified data on manufacturing enterprises in Russia and appraisal of factors, which limit their business activities, are presented in Figure 1. This presented information let us make a conclusion that we can not ignore the role of constraints in the development and management of the enterprise. A variety of enterprise classification constraints can be used, but management of internal constraints may bring the greatest effect, since external constraints of the enterprise are difficult to influence (for instance, high % of bank credit).

**Figure 1: Evaluation of the constraints of Russian manufacturing enterprises in 2015.**



Source: Authors' approach based on the statistics database of the enterprises of the Russian Federation

Our researches have shown that a lot of western scientists, such as, D. Dagdail (1998), D. Galloway (1988), Goldratt E. (1992), E. Noreen (1995), B. Ronen (2005), S. Bragg (2007), A. Sokolov (2007) and others have investigated and used the method of management accounting - a method of TA (Throughput Accounting) since the end of 1980s. The emergence of this trend in management accounting is directly related to the study and development of management theory - the theory of constraints (TOC).

The theory of constraints is successfully being applied abroad in such big companies as Avery Dennison, Bethlehem Steel, General Motors, National Semiconductor, United Airlines, Boeing, ITT, Procter & Gamble, IKEA,

Wall-Mart, Zara. Besides TOC is introduced not only in production, but also in logistics, wholesale trade, and retail, human resources management.

The main attention of theory of constraints is given to management of constraints of the production-economic activity of the enterprise. It supplements this management system, providing all the necessary information to managers for management and control over the constraints of an enterprise. Basic principles of the TA method of accounting are as follows:

- 1) value of the product (work, service) is created at the moment of product (works, services) sale;
- 2) the principle of resources redeployment in places of restrictions for the purpose of Throughput maximization;
- 3) the principle of urgency (management statements);
- 4) the principle of comparability of approaches to calculation of costs;
- 5) the principle of integrity (integration);
- 6) the principle of continuous perfection of accounting and analysis systems.

We introduced a new classification of constraints in terms of business processes of industrial and economic activity of the enterprise. We have also chosen fundamental measures to increase capacity of constraints. The impact of the chosen measures on management accounting is considered in our other work (Elsukova, 2015).

We distinguish the following in internal constraints:

- physical constraints of the resource capacity (production equipment, the length of work of important employees, the area of trade)
- physical constraints in logistics (the amount of stocks of raw materials, work in progress, the area and volume of the warehouse)
- organizational (policy, methods of throughput management, methods of recruitment and work with the staff)
- process constraints (a set of manufacturing operations, a part of the production process)

For each type of constraints the center of responsibility for the identification of constraints and formation of information about them in the system of management accounting are prescribed. For example, for the constraints of physical indicators - director of operations, for organizational - deputy director of economy and etc. To every responsible person certain indicators

- both incomes and expenses are given.

It is advisable in the framework of the TA method is the introduction of an indicator on the T-zone. T-zone is the center responsible for the Throughput, which is the constraints of an enterprise at a particular point in time, the dislocation of which can each time to change. T-zone can be in different parts of the enterprise. The historical aspects of the development method of throughput accounting were considered in our research (Elsukova, 2015). TA method is an alternative to traditional approaches of cost accounting, as in many studies which are dedicated to this method, irrationality of information formation about the full cost of production for the purpose of management decision-making is proven.

The financial result of the enterprise as a whole represents the difference between its incomes and expenses. In the method of management accounting a different approach to the delimitation of the financial result is considered. As part of the TA method, not the products but the impact of decisions on the enterprise's results is estimated, since decisions influence the change of costs in both the short and long terms. The main difference of the TA method from traditional methods of management accounting is the shift from the concentration on the costs to the primary valuation of cash generation's cost - Throughput.

### 3. Results and Discussion

According to the principles of the TA method the value of a product as well business on the whole is created at the moment of the sale of goods and services. The activities of all subdivisions of the enterprise is aimed at the process of selling goods.

One of the discussion questions is the calculation of indicators in the TA method. The indicator Throughput (T), calculated per unit of the product, shows the cash flow, which is generated by each product, made at the enterprise. Other two indicators: operational costs (OE) and investments in buildings, facilities, and supplies (I) are also vital for analysis of the enterprise's results. Let us examine the problems of these indicators.

The formula for calculating of the Gross T-Throughput:

$$T = R - TVC \quad (1)$$

where R- Revenue from sales of products, goods, services (tax deduction),

TVC- total variable costs or direct material costs.

In fact, Throughput is the funds, which are coming to the account of the enterprise from product sales deducting funds, spent on the purchase of the materials, which were used in the manufacture of the product and rendering of services by third parties. The increase in total Throughput indicator is the aim of the company. Throughput is calculated on any product and an hour of work of the equipment in a narrow space or the restriction area. One of the important features of the TA method is delimitation of narrow sides which hinder the achievement of maximal Throughput (Sungatullina, 2015).

Throughput indicator reminds marginal income rate, calculated by the method of direct costing. However, the difference is what costs should be considered variable. Options for choosing the variable costs are shown in Table 1. It is important to emphasise that the Throughput value changes in direct proportion to the change in volume production and sales. According to statistics for 2005-2014 (Rosstat, 2015) costs of Russian enterprises on production of manufacturing industries, about 69.5% of costs accounted for by material costs, which makes the calculation of this indicator is quite effective.

The structure of TVC depends on the industry specifics of the enterprise and should be determined depending on the cost structure and the nature of production individually.

**Table 1: Structure and types of total variable costs (TVC), Authors' approach**

№	Structure and types of total variable costs (TVC)	Costs
1	A tough approach into a practical method	Direct material costs
2	The classical approach (E. Noreen, S. Smith)	Direct material costs Subcontracting costs (cost of manufacturing at subcontractors) Commission of % of the selling price Customs duties and taxes, calculated on the volume Costs of delivering the goods to the buyer, implemented by outside organizations

3	Approach in the early TA method	Direct material costs Costs of delivering the goods to the buyer, implemented by outside organizations
4	The recommended structure of TVC for services	Direct material costs Direct cost of labor, directly associated with the production of the product (service) Subcontracting costs (cost of manufacturing at subcontractors) Commission of % of the selling price Customs duties and taxes, calculated on the volume Costs of delivering the goods to the buyer, implemented by outside organizations
5	Recommended structure of TVC, the extended approach in order-related production	Direct material costs on the order Subcontracting costs (production Costs from subcontractors) on demand (service-side) Travel expenses in order Commission of % of the sales price order Customs duties and taxes, calculated on the volume Transportation costs for the order

Other discussion point the authors worked on in throughput accounting method (TA) is the joint use of management accounting techniques: ABC costing and TA (Kaplan, 1987; Coate, Frey, 1999; and Huang, 1999). The majority of authors, which promote the interaction of these management accounting techniques, share the view of using TA method in making managerial decisions for the short-term objectives and ABC method for long-term goals. Both methods have the same goal: to maximize the financial outcome of the organization.

TA method used to improve profitability within existing resources and limitations, existing products and customer relationships. The ABC method helps to reduce operating costs, gives a signal to managers which products and customers are generating revenues in excess of cost, and what products and resources customers require, larger than the revenues generated from the current use of resources.

The combined use of these methods will lead to more structured information in the enterprise about limiting factors (resources), and activities

that use these resources. In the adaptive method TA, it is expedient to use elements of the methods of ABC or TDABC (Time-driven activity based costing). Both methods find the interaction in the measured time performance in responsibility centers. Cost allocation by ABC method between products and customers, is advisable to carry out once a year. The purpose is to identify the profitability of products and customers. For example, to collect complete information about customers is often only possible at the end of the year. Management accounts by the method TA it is advisable to make quarterly, monthly (weekly if necessary). Thus, collecting information about the operating costs in the framework TA should be implemented in a very detailed way (as in method ABC): for each activity and group equipment. In the end – cost control becomes more effective. However, to allocate these costs between products and customers should be only for the year.

The conclusion is also debatable. The concept of TA and TOC, in our view, may be supplemented by the theory of the calculus of the added value. The concept of value added found in the literature quite often: Durand (1993), Daly(1995), Proff (2015) and others. This concept was also used to assess the economies, industries, and for assessing the performance of the company. Approaches to the definition present in Marx's Capital. The creation of added value and achieving long-term growth of the company becomes the target of the company. Some researchers reach the calculation of value added for product.

Newly created value is the sum of the profits and total costs of wages. The total cost of wages include: wages of employees, salaries of managers, office workers, etc. it is Assumed that materials, services of other organizations amortization of equipment and buildings is the cost of resources, which the company itself did not participate. Therefore, they should not be included in the newly created value.

Newly created value, as a rule, rely in General on the company. This indicator provides a measure of the benefit of the company trying to achieve its goals in the market. Given that the cost of labor in recent years often characterized as fixed costs, the decisions directed on the increase of the value added lead to higher profits.

NCV – newly created value:

$$NCV = R - PCV \quad (2)$$

Where R- Revenue from sales of products, goods, services (net of taxes),



PCV - previously created value of products sold by the company (cost of basic and auxiliary materials third party services, including rental of premises and equipment, etc.)

However, newly created value is difficult to calculate for each product. This will require costs to be divided into four parts: material costs, costs of labour, depreciation and other expenses.. Then you should find all four parts of the cost in the unit cost of the product. Practically this can be done with the help of analytical cost accounting. This will require adding a new level of analytics to the accounting of overhead costs. Then under the appropriate method of cost accounting it must be distributed among products in proportion to the selected database. Distribution is every part of this item. This approach allows us to determine the contribution of each product to the newly created value of the company. Newly created value of the whole company it is advisable to determine on a monthly basis, the newly created value of the product – annually using the method of ABC.

Economic value added (EVA) represents a company's profit from ordinary activities after tax, less the amount of fees for all invested in venture capital. Practically the measure of Economic value added, EVA (Stern Stewart & Co.) is calculated as follows:

$$EVA = (P - n) - IC * WACC = NP - IC * WACC = (NP / IC - WACC) * IC \quad (3)$$

where:

P - profit from ordinary activities;

n - taxes and other obligatory payments;

IC - invested in venture capital;

WACC - weighted average cost of capital;

NP - net profit.

$$EVA = (NP / IC - WACC) * IC = (ROI - WACC) * IC \quad (4)$$

where: ROI - return on the capital invested in the enterprise.

In the method TA this formula can be converted in this way (if you disregard sales tax):

$$EVA = (T-OE)/I - WACC) * I = (NP / I - WACC) * I = (ROI - WACC) * I \quad (5)$$

You can also highlight derived from this indicator, such as value-added per unit time of constraints the coefficient of performance of the firm as the ratio

of value added to revenue. Propose to use to manage the financial results of the organization following management reports are presented in table 2.

**Table 2: Proposed format of the statement of financial results for the month of March 2015 of the main activity of LLC “Artempress” (Authors’ approach)**

Indicators	Fact For March 2015	Plan For March 2015	Deviation in a month, $\Delta$
1. Revenue from sales of products, goods, services (tax deduction), \$.	450000	406300	43700
2. Total Variable costs (TVC), \$.	168500	152000	16500
3. Throughput (T), \$.. (1-2)	281500	254300	27200
4. Operational Expenses (OE), \$.	118300	128700	6000
5. Net Profit, \$. (3-4)	163200	160300	2900
6. Investments (I) \$.	32578	27000	5578
7. Cash Flow (CF), \$. (3-4- $\Delta$ 6)	147400	146300	20065
8. ROI, % (5/6)	5,01	5,94	-0,93
9. Speed (k) of transformation of reserves into the cost of generating funds (3/6)	8,64	9,42	-0,78
10.WACC, %	4.0	3.8	0.2
11. EVA, \$. ((8-10)*6)	329	577,8	248,8

#### 4. Conclusion

After research into method of management accounting – throughput accounting- and its impact on the financial results of the company, we can draw the following conclusions. The paper represents further study of the method TA and discussion on some issues of accounting. Identification of basic indicators of the financial results of the company to which to orient managers in achieving their goals, the indicators T, NP, ROI, EVA and their derivatives. New company's performance assessment will be more relevant for planning and managing results of the organization in flexible manufacturing systems. Use of the throughput accounting method

refocuses the enterprises and their management on satisfaction of consumers' requirements and growth (extension) of business.

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