
Elements of Management Accounting in the Use of the Concept of the Product Production Cycle in the Organization of Business Process Accounting

Saidakbarov Khusniddin Abdisalamovich, Ph.D

Lecturer of the Department of Accounting of TDIU p.f.f.d, Tashkent, Uzbekistan, x.saidakbarov@tsue.uz

Abstract: In this article, the author points out that if an independent separate accounting system is introduced within the framework of management accounting, the effectiveness of information for decision-making will increase significantly, since a process-oriented approach will allow grouping costs, generating costs, as well as the ability to determine the financial result for all processes of the accounting entity.

Keywords: management accounting, efficiency, grouping, cost, analytical support, process approach.

Introduction

Management of business flows as an effective practice of the new era is to increase the controllability and efficiency of the flows that have the greatest impact on the formation of the added value of the product and its usefulness for users. In this case, in the case of the introduction of an independent separate accounting system within the framework of management accounting, the effectiveness of information for decision-making will increase significantly, because the process-oriented approach allows for the grouping of costs, the formation of costs, as well as the determination of the financial result for all processes of the activity of the accounting entity.

The association elements of the management accounting system in the case of business flow-oriented management are presented in Figure 1.

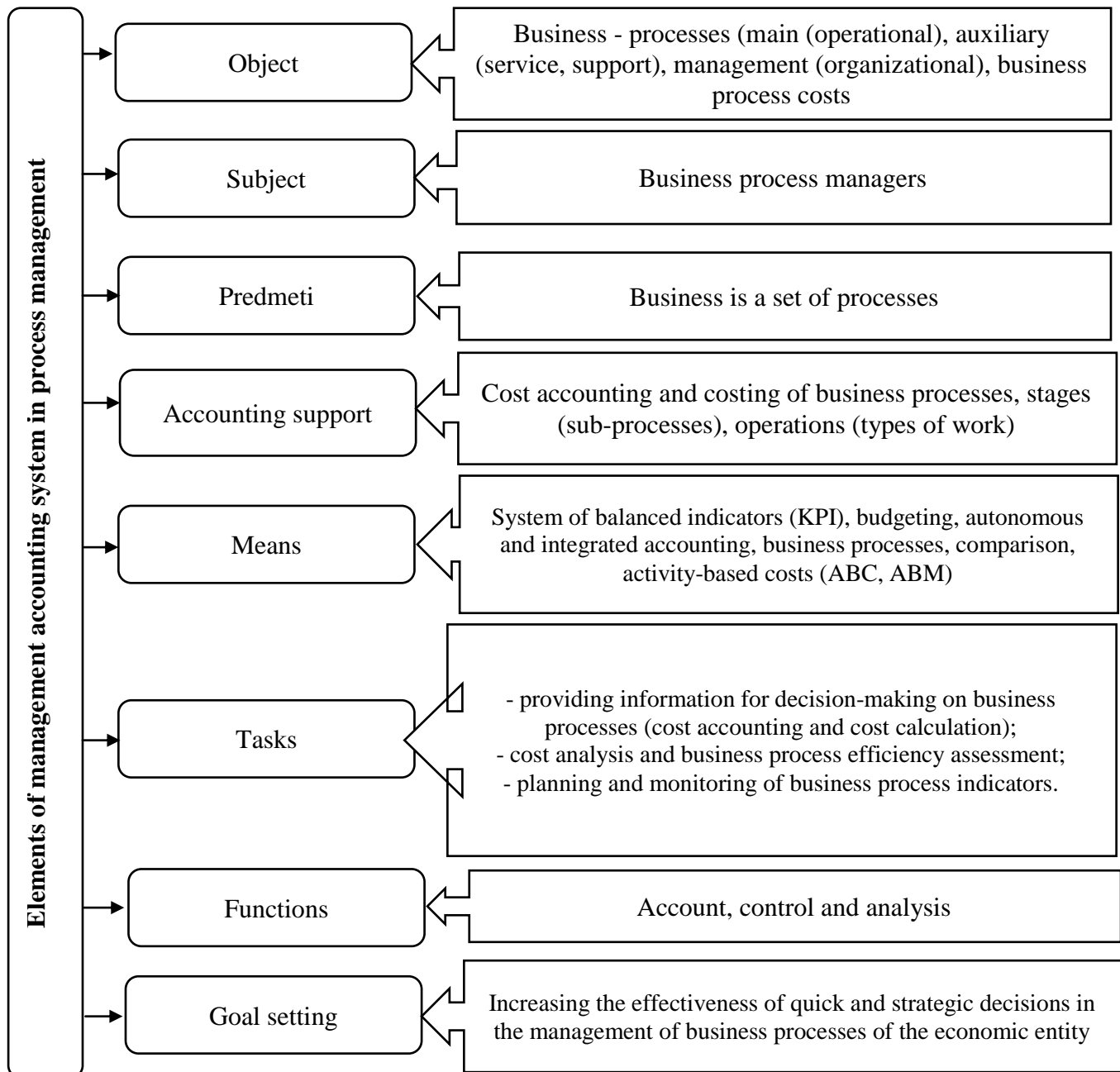


Figure 1. Elements of the management accounting system during business-process-oriented management

This, in turn, makes it possible to evaluate the effectiveness of each business process. Analytical development of the synthetic account, in addition to the use of separate synthetic accounts to reflect the main, auxiliary and service processes, it is possible to significantly reduce the expenses transferred to the "Overall production costs" account, improve the quality of management, determine the costs of the processes, as well as determine more accurate financial results. Gives

Analysis of literature on the topic

If we discuss the opinions of economists on the topic, as a result of our analytical research, we have distinguished two approaches to dividing the stages of the product life cycle: "separating the ITTKI stage" and "without separating the ITTKI stage". The first approach is characterized by the mandatory implementation of a set of actions on research, development, design, creation of a test sample, corresponds to modern management approaches, that is, a new product cannot be introduced to the market without the corresponding costs of its development. Representatives of the second approach do not consider the need to carry out the stage of scientific research and development.

According to N.J. Badalov, the stages of the product life cycle consist of stages such as evaluating the technical level and quality of the product, planning to improve product quality, standardization and standardization of product quality requirements, product development and production, and technological preparation of production.[1]

According to D.A.Endovitsky, A.V.Chepulyanis, the stages of the product life cycle are divided into pre-production stage, production stage and post-production stage.[2]

O.N. Volkova divides the stages of the product life cycle into stages such as idea, implementation, maturity, decline.[3]

D.S. Shlichkov divides the stages of the product life cycle into stages such as research, development, design, production, disposal of the product and withdrawal from the market [4].

According to N.V. Gracheva, the stages of the product life cycle consist of stages such as research and development, ITTKI, introduction of technology into production, production, rapid growth of production, and decline [5].

These authors emphasize the ITTKI stage.

Analyzing the interpretation of the above authors, we support the first approach, taking into account the feasibility of implementing ITTKI as one of the most important factors of maintaining the competitiveness of the accounting entity

Research methodology

The general scientific principles of research, which provide a comprehensive and systematic approach to the study of economic relations and events in their development, as well as interrelationships, served as a methodological basis for the research work. In the process of research, general scientific and special methods of research - analysis, methods, logical, general and systematic approaches to the evaluation of economic phenomena were used. The systematic approach was used to clarify the concept of business process, the concept of business process formation, to analyze and evaluate the business process system in accounting. A comprehensive approach to the problem determined conducting research in the field of business process organization, accounting, management accounting, management of enterprises of the economic network.

Analysis and discussion of results

Due to the above, we developed the composition of the elements of the management accounting system for the model of accounting entity management by processes (management by business processes) (Table 1).

The result of the conducted research made it possible to formulate the following rules of scientific innovation and draw conclusions.

In our opinion, firstly, the classification symbols were supplemented and we proposed new classification groups of business processes. Among the additional features of the classification, the attitude of business processes to the possibilities of digitization has a special place, and according to it, the following were distinguished:

- business processes that can be digitized;
- business processes that cannot be digitized.

Digitizable business processes are business processes that participate or can participate in a management system based on the formation of large databases. Non-quantifiable business processes are business processes for which a management system based on the use of large databases does not apply or cannot be applied.

1-Table Elements of the management accounting system for the business-process management model of the accounting entity¹

№	Elements of management accounting system	The content of the elements of the management accounting system during the management of business processes
1.	The goal	Cost accounting, costing of business processes Evaluating the effectiveness of business processes
2.	Principles	Focus on business processes
3.	Objects	Business processes
4.	Arrangements	<p align="center">Accounting procedures:</p> <ul style="list-style-type: none"> - classification of costs according to business processes; - cost accounting for business processes; - distribution of costs according to business processes; - - cost calculation for business processes. <p align="center"><i>Analytical procedures:</i></p> <ul style="list-style-type: none"> - regarding the efficiency of business processes; - making decisions about expansion and reduction of business processes; - - development of management reports on business processes. <p align="center">Control procedures:</p> <ul style="list-style-type: none"> - budgeting for business processes; - control of budgets for business processes; - - analysis of deviations in business processes. <p align="center"><i>Organizational procedures:</i></p> <ul style="list-style-type: none"> - organization; - standardization; - - regulation of business processes. <p align="center">According to accounting procedures:</p> <ul style="list-style-type: none"> - innovative computing systems; - - system of accounting accounts. <p align="center"><i>According to analytical procedures:</i></p> <ul style="list-style-type: none"> - - analysis of the break-even point; маржинал таҳлил; - - analysis of expenses, income and financial results in terms of business processes; - - management reports on business processes; - - a balanced system of indicators - - (on "Business processes"); - - key performance indicators for business processes. <p align="center">According to the control procedures:</p> <ul style="list-style-type: none"> - fixed and flexible budgets for business processes; - - analysis of deviations in business processes.
5.	Means	<p align="center"><i>According to organizational procedures:</i></p> <ul style="list-style-type: none"> - organizational structure of business process management; - standards and regulations on business processes; - - accounting policy for business processes

Secondly, among the business processes that can be digitized, we suggest considering the following:

- fully automated business processes;
- partially automated business processes.

¹ Author development

Third, business processes that cannot be digitized are not automated.

As an additional classification group of business processes, we offer the following grouping (according to it):

- business processes involved in increasing added value;
- business processes that do not participate in increasing added value.

Also, among additional groups, we offer a business process known as "R&D to Product Development and Production". This is relevant for accounting entities that have a large share of business process and inventive activity.

At the same time, the elements of the management accounting system for business processes and the product life cycle have been developed - the purpose, principles, objects, procedures, tools and their content.

In the conditions of high competition, manufacturers strive to shorten the product life cycle in order to increase the financial stability and profitability of the accounting entity. This requires the use of the product life cycle concept in the management system. It ensures the formation of an effective system of management accounting at all stages of the life cycle, from the stage of product development and production to its removal from the market or disposal. In this case, management accounting has the task of taking into account costs and calculating the cost of each stage of the life cycle, the price of finished products at different levels, the formation of data on the sales results of each stage, the determination of reserves for reducing and optimizing the costs of each stage.

Life Cycle Costing (LCC) - the concept of taking into account, calculating and controlling the costs of the life cycle of a product was first used in the development of government projects of the defense network in the United States.[6] Life cycle calculation is used not only in the defense industry, but also in commercial organizations specializing in the creation of products with a short production life cycle.[7]

In our opinion, the relevance of the considered concept in the organization of the management accounting system is as follows:

1. The presence and increasing importance of ITTKI in order to prepare for mass production of the product and to maintain high competitiveness at the stage of its launch ("product development" stage). Many accounting entities incur significant costs during the preparation and start-up phase of product production. In this regard, the concept of cost accounting and calculation by stages of the life cycle, in contrast to traditional accounting systems, allows to reliably determine financial indicators (costs and revenues) at the initial stages of the life cycle, such as design, start of production.

An important condition for the use of this method is the emergence of technologies capable of accurately (up to 90%) forecasting the cost norms for the product being designed for all stages of its life cycle. In this regard, life cycle calculation is based on the forecasting and cost management of the product being designed and the monitoring of the fulfillment of these standards at all stages of the life cycle.

2. Impact of technological processes and reduction of product life cycle. Technological development leads to a significant shortening of the life cycle of many products, which requires more attention to evaluate the reaction of consumers or the costs of creating a minimum viable product (MVP).
3. Increase in consumer demand for the product and shortening of the "maturity" stage. Consumer demands regarding the functional, quality and use characteristics of finished products and goods are constantly increasing, which requires careful control at every stage of the design and production of goods.

4. Stages of digital production and product life cycle. In the conditions of the digital transformation of the economy, new technologies are emerging that allow for the creation of digital pairs that help to analyze data and accurately calculate the price of a manufactured product at the design stage, forecast the usefulness of finished products under the influence of internal and external factors. The emergence of such technologies facilitates the process of choosing the optimal management solution from among several alternatives (production or purchase) at each stage of the life cycle.

In contrast to traditional approaches, accounting for costs according to the stages of the life cycle allows:

- "produced and production of the limited resources of the accounting entity

Table 2 Elements of the management accounting system for the management model for the stages of the product life cycle

№	Elements of management accounting system	The content of the elements of the management accounting system during the management of the stages of the product life cycle
1.	The goal	Accounting for the stages of the product life cycle, costing
		Evaluation of the effectiveness of all stages of the product life cycle, including pre-production, production, post-production stages
		Extending the "Maturity" stage of the product life cycle
2.	Principles	Interdependence of successive stages of the product life cycle
		The ability to quantify the results of the stages of the product life cycle
		Control of quality changes during the transition from one stage of the product life cycle to another
3.	Objects	Stages of the product life cycle
4.	Arrangements	<p>Accounting procedures:</p> <ul style="list-style-type: none"> - classification of costs according to the stages of the product life cycle; - consideration of costs for the stages of the product life cycle; - distribution of costs according to the stages of the product life cycle; - calculation of the cost according to the stages of the product life cycle.
		<p>Analytical procedures:</p> <ul style="list-style-type: none"> - on the effectiveness of the stages of the product life cycle; - making decisions regarding expansion/shortening of product life cycle stages; - development of management reports on the stages of the product life cycle.
		Control procedures:

		<ul style="list-style-type: none"> - budgeting according to the stages of the product life cycle; - control of budgets according to the stages of the product life cycle; - analysis of deviations according to the stages of the product life cycle.
		<p style="text-align: center;">Organizational procedures:</p> <ul style="list-style-type: none"> - organization, standardization, regulation according to the stages of the product life cycle
5.	Means	<p style="text-align: center;">According to accounting procedures:</p> <ul style="list-style-type: none"> - innovative computing systems; - system of accounting accounts.
		<p style="text-align: center;"><i>According to analytical procedures:</i></p> <ul style="list-style-type: none"> - <i>analysis of the break-even point;</i> - <i>marginal analysis;</i> - <i>analysis of costs, revenues and financial results by stages of the product life cycle;</i> - <i>management reports on the stages of the product life cycle.</i>
		<p style="text-align: center;">According to the control procedures:</p> <ul style="list-style-type: none"> - fixed and flexible budgets for the stages of the product life cycle; - analysis of deviations according to the stages of the product life cycle.
		<p style="text-align: center;">According to organizational procedures:</p> <ul style="list-style-type: none"> - management organizational structure for the stages of the product life cycle; - standards and regulations on the stages of the product life cycle; - the accounting policy for the stages of the product life cycle

Conclusions and suggestions

The research carried out at this stage allows us to make the following conclusions:

1. The process-oriented approach to the management of the accounting entity is based on the concept of added value, which implies the classification of business processes according to the model elements of the value chain that form the added value. It provides identification of value-adding and non-value-adding business processes, and is used to make decisions about outsourcing, excluding non-value-adding business processes from the management organizational structure and business model of the accounting entity.
2. A process-oriented approach in management is implemented only if the top management shows an inclination to the process management system in the activity of the accounting entity. On this basis, a management organizational structure is formed, which provides for the separation of business processes that form the organizational, structural basis of the business model of the accounting entity.

3. Tendency to the process-oriented management model implies abandonment of the linear-functional management system, reorganization of the current model of management organizational structure, and engineering of business processes. Line-functional management organizational structure and management organization, as well as business process management accounting, cannot be added together. Separation of business processes is carried out not by the accounting service, but by the top management of the economic entity.
4. In the current environment, accounting entities need to forecast costs at each stage of the product life cycle, control the norms, in which it is necessary to distinguish the stage of "product development" to determine financial indicators (costs and revenues) at the pre-production stage in various sectors.
5. The need to develop a management accounting system for the stages of the life cycle is confirmed by the following trends of the modern economy: the existence and increasing importance of ITTKI ("product development" stage) to prepare for mass production of the product and maintain high competitiveness at the stage of its launch; impact of technological processes and reduction of product life cycle; increasing consumer demands for the product and shortening the "maturity" stage; digital manufacturing and product life cycle stages.
6. The study of approaches to the classification of the stages of the product life cycle made it possible to conclude that it is appropriate to use management accounting procedures and tools for forecasting and controlling costs as one of the most important factors of maintaining the competitiveness of an economic entity at the stage of the implementation of ITTKI. For management accounting, we divided the following stages of the product life cycle: product development (specific to the "ITTKI" process); growth (typical of the "Production" process); maturity (specific to the "Production" process); filling (characteristic of the process of "withdrawal and disposal of the product from the market"); decrease (characteristic of the process of "Removal of the product from the market and disposal").
7. Traditional calculation systems do not take into account the costs of the product outside the calendar year, that is, during several stages of the life cycle, which requires the development of appropriate management accounting tools.

These cases contribute to the development of the information supply system of cost management accounting in general and reveal the theoretical aspects of management accounting for the stages of the product life cycle.

To further develop management accounting for business processes and stages of the product life cycle, methodological recommendations for calculating the actual cost of the product (in the example of the production of boilers for central water supply), as well as the introduction of accounting in the management accounting system in the context of applying the concept of process-oriented management and the product life cycle it is desirable to develop a system of accounts and correspondence records for

List of used literature

1. N.J. Badalov. The main functions of product quality management in enterprises. ACADEMIC RESEARCH IN MODERN SCIENCE. International scientific online conference. January 21, 2022. Pages 73-80.
2. Endovitsky, D. A. Methodology of strategic calculation of costs and primers of medical industry / D. A. Endovitsky, A. V. Chepulyanis // Uchet. Analysis. Audit. – 2016. – No. 6. – S. 66–82.
3. Volkova, O. N. Upravlenchesky uchet: uchebnik i praktikum dlya vuzov / O. N. Volkova. — Moscow: Izdatelstvo Yurayt, 2021. — 461 p.
4. Uchet zatrat, kalkulirovaniye i analiz sebestoimosti lishishchnykh uslug and otrasli lishishchno-communalnogo hozyaystva. Uchebnoe posobie. ISBN: 9785436580265. 2021 g. 210 str.

5. Gracheva, N. V. Podkhody k upravleniyu effektivnostyu innovatsionnykh protsessov / N. V. Gracheva // Vestnik Bryanskogo gosudarstvennogo universiteta. – 2012. – No. 3-1.
6. Stupina, A. A. Noveyshie sistemy upravlencheskogo ucheta / A. A. Stupina [i dr.] // Sovremennye problemy nauki i obrazovaniya. – 2014. – No. 2. – S. 412–419.
7. Medvedeva, E. A. Upravlencheskiy uchet v usloviyax primeneniya kontseptsii zhiznennogo tsikla produktsii / E. I. Kostyukova, A. V. Frolov, E. A. Medvedeva // Sovremennaya ekonomika: problems and solutions. – 2020. – No. 1 (121). - S. 118–125.