

CLASSIFICATION OF EXPENDITURES ON INNOVATION ACTIVITIES OF INDUSTRIAL ENTERPRISES

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Abstract. Modern trends in economic development, such as globalisation of markets, intensification of competition, changes in consumer demand, shortening of life cycles of goods and technologies, increasing requirements for their quality, and rising costs of used resources, require leaders and managers to find effective methods of managing the company's activities. Ensuring the competitiveness of enterprises in such conditions is impossible without the introduction of the latest management concepts, which requires changes and development of functional management, one of which is the management of costs based on the definition of new criteria for their classification. Classification of costs for management purposes should meet the main requirement – it should be based on characteristics that allow differentiation of costs for their management in various aspects. It creates conditions for determining the level of costs according to the scope of their management, organisation of planning, accounting, control and analysis. *The purpose of the article* is to consider the accounting, analytical and management tasks of cost classification in industrial enterprises and its improvement. *Methodology.* The methodological basis of the thesis is a set of methods and principles of scientific knowledge, general and special methods and techniques used in research. The theoretical basis of the study is the scientific work of domestic and foreign scientists on issues of cost management, organisation of information systems, management accounting of costs, methods of cost management. The legal basis of the study consisted of the current legislative and regulatory documents regulating the formation of costs of enterprises in Ukraine. The information base included official statistical data, reporting and accounting information of enterprises, Internet resources and publications, as well as the results of own research. In order to achieve the set goal, the methods of system approach (to study and characterise the theoretical basis of cost classification) and structural-logical analysis (to determine the criteria for classification of costs of an industrial enterprise) were used when writing the article. *Practical implications.* The obtained results and the developed recommendations constitute a methodological basis for the improvement of the management of costs for the innovative activity of industrial enterprises based on the definition of new criteria for their classification. The most practical results are: the study of the similarities and differences in the approaches to cost classification of industrial enterprises, the definition of the objectives of cost classification, the consideration of cost classification by cost items, the need to distinguish additional features of cost classification. *Value/originality.* The classification of costs for the innovative activity of an industrial enterprise has been improved and extended with additional criterion features (possibility of management, accounting and reporting, the principle of accepted obligations, the place of formation, according to the stability factor), due to the need to determine the relationship between the size of the enterprise's costs and the possibilities of exercising managerial influence on them by managers of different levels, which makes it possible to optimise the composition and structure of costs, which are reflected in various methods of cost management and are the basis for their choice of coordination.

Key words: costs, classification, accounting, analysis, management, enterprise.

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1. Introduction

One of the methods of research of objects studied – classification, i.e. division into classes on the basis of certain general features of objects and regular connections between them. Classification of costs allows to identify objectively existing groups of costs, processes of cost formation and relations between their separate parts. The complexity of the structure and diversity of the processes of cost generation require their subdivision according to a number of characteristics. Depending on the objectives and methodological approaches, several cost classifications can be distinguished. The more the signs of classification are highlighted, the higher the degree of knowledge objects. Classification of expenses for purposes of management should meet the main requirements – to be based on signs that allow to differentiate costs for cost management in various aspects. It creates prerequisites for determining the level of costs for objects of their management, organisation of planning, accounting, control and analysis.

The issue of classification and grouping of costs according to various characteristics has been studied in detail by domestic and foreign scientists and researchers. Classification of production costs shows objectively existing groups of costs, processes of their formation and relations between their separate parts. Without classification of costs it is impossible to solve the task of their management in the enterprise. The complexity of the structure and the variety of processes of cost formation provide for their subdivision according to a number of characteristics. For the organisation of an effective management system enterprise it is necessary to apply an economically justified classification of costs according to certain characteristics. Classification of costs involves their grouping into logical groups. This helps not only to better forecast and take into account costs, but also to determine the degree of their influence on the level of production efficiency. Thus, the purpose of cost classification is to allocate those parts of costs that can be influenced by specialist enterprises (organisations), to manage them and to meet the information needs of internal and external users.

2. Purposes of Cost Classification

Costs, as an object of knowledge, are well studied in foreign theories of accounting and analysis. However, in theory foreign accountants and economists – practitioners have not yet come to a consensus on what signs should be followed to classify the costs of production and what is the significance of this or that feature of classification for the decision accounting and analytical and management tasks.

Classification of costs is an objective and is constantly changing under the influence of practical management needs and theoretical research. Classification shows objectively existing cost groups, processes of cost formation and relations between them, their separate parts.

At present in practical activities enterprises the management is provided with information on production costs in the cut elements of production costs and cost calculation items, which is clearly insufficient for the organisation of the cost management system. For management, managers need not only costs, but also information about the object of costs – products, works, services or a type of activity enterprises that need to determine the costs associated with their production (execution, provision).

The classification of costs is mainly of an objective nature. It is not only a consequence of the practical necessity of cost management, but also one of the tools of theoretical research in this field. Cost classification is not static, permanent. Under the influence of changes in the needs of cost management, the development of cost theory and certain practical aspects of their management, the classification of costs has been constantly developing, evolving by introducing new criteria.

Nowadays, a large number of criteria are used in the classification of business costs. Some of them have been used for a long time in planning and cost accounting since ancient times of administratively centralised economy, others appeared more recently in connection with the development of cost management needs and to some extent borrowed from foreign theory and practice.

In economic literature ed 3's accrued to the 12th signs of cost classification. In general goals classification of costs in Ukrainian systems include: calculation (estimation of stocks), decision-making, control.

According to many authors, the problem with cost classification is the variety of classification features and the lack of hierarchy.

In Table 1, the cost classification codes are grouped according to their traditional use in accounting and management by both domestic and foreign practitioners.

In Western countries with a developed market economy, all production costs are generally broken down into three elements (as detailed classifications are usually lacking): 1) direct material costs; 2) direct labour costs; 3) indirect costs (Ihnatenko, 2012).

Comparing cost classification systems used in domestic and foreign accounting, one can talk about similarities and differences. They have a place both in Ukraine and abroad classification of costs into main-overhead, direct-indirect, variable-fixed for management costs of ownership. However, in foreign countries each organisation is different production accounting system independently develops and uses its cost nomenclature for cost management. In the home country practitioners account there is a unified classification of costs for all branches of the economy, which until now was considered a significant advantage of domestic accounting

over the western. At the same time, in the homeland account and for the border classification of costs according to certain characteristics is conditional character, one concept is often replaced by another (for example, indirect and overhead, basic and fixed costs). This can be explained by the pragmatism of Western accounting, since everything is aimed at creating conditions for simplification and practical application, which sometimes violates a neat system or classification. In the native theory and practice it is connected with the dominant opinion about the absolute accuracy of accounting data accounting and different interpretation of the same costs in the works of many authors on this problem, without taking into account the practical significance.

Only a systematic accounting of the above conditions can become the main incentive for the development of a comprehensive theoretical classification of costs for practical necessity.

Enterprise costs are primarily divided into two main corresponding categories of functional types of activity with which they are associated: production costs and non-production (operating) costs.

Table 1

Classification of costs of industrial enterprises

Classification features	Cost allocation
Homeland account	
By economic elements	Economic elements of costs: material costs (after deducting the cost of return waste); depreciation of fixed assets; salaries and wages (basic and additional); social security contributions; other expenses.
Costs by costing items	cost of a costing item
In relation to the technological process	basic, overhead
By composition	single-element, complex
By the cost of production method	direct, indirect
In relation to the final product	costs of work in progress, cost of finished goods
By role in the production process	production, non-production
According to the plan coverage	planned, unplanned
Foreign account	
By cost-effectiveness	productive (effective), unproductive (ineffective)
In relation to production volume	variable, constant, mixed
By frequency of occurrence	current, disposable
By the degree of regulation	regulated, arbitrary (partially regulated), poorly regulated (set)
By responsibility centre	controlled, uncontrolled
By the degree of variability in the decision-making process	relevant, irreversible, imputed

Production costs are the costs incurred by an enterprise in its production activities and in transforming materials and raw materials into a finished product through the work of production workers using production equipment. They are divided into three categories: direct material costs, direct labour costs and general production overheads.

The direct cost of materials is the cost to an enterprise of all materials used in the composition of the finished product that forms its basis. Materials that are used to create production conditions or that cannot be compared to a specific product are not included in direct costs, but are included in the composition of production overheads.

Direct labour costs represent the wages paid to workers directly involved in producing the product, performing the work or providing the service that can be directly attributed to a specific cost object.

Producer overheads are costs associated with the production process that cannot be allocated economically to a specific cost object. Examples of such costs are indirect wages, maintenance and repair of equipment and production facilities, depreciation and insurance of fixed assets, utilities and rents.

The cost of direct materials together with the cost of direct labour make up the cost of services. Direct labour and production costs total overheads are conversion costs, costs of processing raw materials to transform them into a finished product. The amount of production costs is in a straight line dependencies ed species works and services provided to consumers, and technological ones processes of their provision. Management of such costs is possible only from the point of view of choosing the assortment of finished works and services provided by enterprises.

Non-production costs include costs of administration, research and development, sales and other business functions. According to the current regulatory documents in Ukraine, they are classified as non-production costs, administrative costs, sales costs and other operating costs.

The considered characteristics of cost classification are used to calculate their size for the purpose of compiling a financial report of the enterprise, intended for assessing its economic condition and making decisions on investment

and crediting of the business entity, developing a strategy for further development.

Based on the ability to trace the movement of costs to a specific cost object, they can be considered as direct and indirect. Direct costs are costs that can be directly attributed to a specific cost object. Costs that cannot be identified with a specific cost object are indirect costs.

Depending on how much cost is required to produce the products, it is divided into costs included in the cost of production and costs incurred during the period. The cost of conversion includes the cost of raw materials and work in progress. These costs are recognised as assets until the goods to which they relate have not been sold. At that point, these costs become cost realised products. Period costs are costs that are not included in the cost of inventories because they are not necessary for production and are considered to be costs of the period in which they are incurred. Period costs are administrative costs, selling costs and other operating costs.

In order to ensure uniform principles of cost estimation of products, costs are grouped according to their purpose, economic elements and cost items. In the process of estimation management is necessary both to ensure reduction of costs by their elements and to draw up material balance sheets, financial development plans.

For industrial enterprises, a compulsory nomenclature of production costs by economic elements has been established: material costs; labour costs; deductions for social events; depreciation; other costs.

3. Classification of Costs by Costing Items

The grouping of costs into cost accounting headings reflects the fact that their composition depends on the destination of the costs and the places where they are incurred. Enterprises form production costs according to the following cost items:

- raw materials and supplies;
- fuel for technological needs;
- electricity for technological needs;
- purchased resources, components, semi-finished products;
- expenses for other material resources;
- works and services of a production nature provided by other enterprises and organisations;
- basic wages of production workers;

- additional wages of production workers;
- and other incentive and compensatory payments;
- deductions for social events;
- general production costs;
- administrative costs;
- selling costs;
- other operating costs.

The classification by items is mixed. It uses two different identifiers: the direction of activity and its type, which contradicts the principles of classification in general.

Such a classification feature as periodicity of occurrence makes it possible to characterise production costs from the point of view of the calendar period in which they are incurred (current and non-recurring costs). For management, this classification is important from the point of view of reimbursement of costs: either they are reimbursed immediately or by means of amortisation. This classification is also important in relation to the different methods of managing these costs. The management of recurrent costs is part of operational tactical management, whereas the management of non-recurrent costs is part of strategic management.

Depending on the expediency, expenses are divided into productive and unproductive ones in the itemised breakdown. Production costs arise from the nature of the company's production activities and are provided for in the cost estimate and business plan. These are costs that are included in the cost of products and services. Unproductive costs are not economically inevitable but arise from deficiencies in technology and production organisation. These are losses. Such costs have a significant share in the activities of industrial enterprises. The detection and liquidation of such costs is an important reserve for reducing the company's costs. Therefore, they should be considered according to certain characteristics that ensure control over this type of costs. Signs of classification of the mentioned costs are: type of wasted resources (materials, raw materials, finished products, labour of employees, means of production); type of losses (incomplete use of resources, irrational use of resources); stage of occurrence (production process, transport process, circulation process); sources of cost coverage (cost of works and services, net profit of the enterprise). The cost management information system should identify these costs.

Losses that are not shown in the information system (hidden losses) increase the cost of provided services and are unused opportunities to reduce the costs of the enterprise. The solution to the problem of reducing losses in industrial enterprises is not only the introduction of resource-saving technology, but also a perfect cost management information system, which provides centres of responsibility for losses at all management levels.

According to the composition of the article, the costs of industrial enterprises can be homogeneous (single-element), consisting of one cost element, or complex, consisting of several elements. Management consideration of only single-element costs increases the volume of information in management, which also negatively affects the efficiency of cost management.

From the point of view of management, planning and control, the most important feature for the classification of costs is how their dynamics change in dependence on changes in the volume of production or other indicators of activity. An increase or decrease in the level of activity of an enterprise causes a corresponding change in the defined costs. At the same time, other costs remain unchanged. According to the dynamics, costs are divided into the following three main categories: variable, fixed, mixed costs.

When characterising costs according to this criterion, it is important to determine not only the dependency on volume changes in activities, but also the speed of these changes. In order to make decisions about increasing production volumes, it is necessary to determine the average cost price, which includes the cost per unit of service production. Although the average total costs give an idea of the production costs typical for the products of the enterprise units, they do not make it possible to assess the change in the total costs of the enterprise when the volume of production changes. The increase in the firm's total costs for an increase in its output by one unit is called marginal cost. Such a classification makes it possible to evaluate total costs in other forms. Average total costs indicate the cost of providing a typical unit of output, since total costs are shared equally for each unit of output. Marginal costs indicate the increase in total costs when an additional unit of service is provided.

The classification of costs into costing headings varies considerably between industries, reflecting their specific characteristics. However, there is a typical nomenclature of items. Classification of items makes it possible to control costs for planning and accounting purposes by the place where they are incurred and by individual product types. In addition, for each cost item, it is possible to determine the degree of relationship between the amount of the cost and the unit of account used.

4. Additional Features of Cost Classification

Not all characteristics of the classification proposed in the literature are used and applied by cost management practitioners in the home country, because some characteristics are similar enough to separate costs into independent groups.

In this regard, the authors believe that 8 classification features of cost allocation (meeting the modern requirements of transition to the international accounting system) are the most objective and useful for accounting, control, analysis and management of an organisation's costs:

- by economic content;
- in relation to the technological process;
- by costing items;
- by types of products, works and services;
- by the method of distribution to the object of production (accounting);
- in relation to the volume of production;
- by the duration of the action (frequency of occurrence);
- in relation to the plan.

Classification of costs with a fairly dynamic and open system, and the emergence of new criteria not only does not prevent the use of previously offered, but also gives users the opportunity to allocate and manage new types of costs depending on the needs and capabilities of the management system.

All types of costs, allocated according to the considered criteria, are used in the cost management of the enterprise. The multiplicity of given types of costs should be applied in large enterprises, because the division of the total amount of costs for individual types with the help of the considered criteria to a certain extent simplifies the management influence on them and thus contributes to their reduction.

The classification of costs thus affects the choice and further application of cost management methods as tools of managerial influence. But there are also other prerequisites for such a choice that require appropriate research.

Given classification features are the basis for the formation of the classification system and the choice of methods of management accounts, which can be used in different enterprises, taking into account the peculiarities of business, including machine-building enterprises. At the same time, it is considered possible for an enterprise to independently choose those classification features of cost grouping that are used by it for further study and analysis of cost behaviour at a competitive enterprise, taking into account the specifics of production.

The cost classifications discussed above are aimed at selecting the object of management in the production process, but they do not take into account the factor of the ability of each entity to influence specific costs, i.e., they do not allow to fully perform the functions of cost management. Therefore, according to the authors, it is necessary to introduce new classification characteristics (Table 2).

By classifying costs in a variety of ways, it is possible to gather information about them and use the data in various production management objectives to increase the efficiency of the company.

5. Conclusions

Cost management is not an end in itself; it is essential for the company to achieve a certain economic result and to increase work efficiency. Cost management functions are primary in relation to production, i.e., in order to achieve a certain production, economic, technical or other result, costs must first be incurred. The study has shown that a prerequisite for effective cost management is the classification of costs, on the basis of which it is possible to exert targeted management influence on the relevant types of costs, the process of their formation and to take into account the interaction between individual types of costs.

The studied approaches to the classification of costs make it possible to state that the existing signs of classification of costs are aimed at allocating the object of management in the production process, but do not take into account the factor of the possibility of each

entity's influence on specific costs, i.e., do not allow to fully implement the functions of cost management. Therefore, it is proposed to introduce

new features of classification, which allow to establish a link between the level of costs and a certain management function.

Table 2

Additional characteristics of the classification of costs for innovative activity

Classification feature	Types of costs	Characteristics	Management object
1. Opportunity management	changed	cost items that can be managed at the discretion of the head of the unit	The management process is primarily subject to manageable costs (control over the performance of planning, organisation and regulation functions).
	unchanged	cost items that cannot be controlled and are not dependent on the managing unit	
2. Reflection in accounts and reports	have occurred and have been recognised in accounting and reports	actual expenses incurred as reflected in the accounting and management reports	In the process of cost management, the second and third groups of costs should be identified first, as their presence can significantly distort the cost of production and call into question the reliability of accounting in general.
	occurred, but were not reflected in accounting and reporting	actually incurred expenses that were not recognised in the accounting and management reports	
	did not occur, but were recorded in accounting and reports	non-existent expenses recognised in accounting and reporting	
3. Commitment principle	mandatory	resulting from a previous legal or constructive obligation. In the short term, the mandatory expenditures are unchangeable and can only be changed after the expiry of the commitment	Mandatory costs should be managed and forecasted in the first place, because if circumstances change in the future, the costs caused by these circumstances will remain. Both groups of costs are sunk costs, i.e., inefficient, and therefore should be subject to mandatory control and management.
	optional	conditioned by previously assumed obligations, but may be changed immediately after the parties' obligations change	
4. Place formation	own	expenses are made in this section	From a management perspective, this division allows for a more differentiated distribution of costs, with a particular focus on own costs, and is designed to address the following objectives: to enable management of the process of saving money by individual business units; to improve the accuracy and detail of product costing, especially for complex, heterogeneous production facilities that manufacture a wide range of products.
	non-own costs	expenses incurred by other divisions	
6. For the ohmic stability factor	unchanged for a long time	non-deductible expenses vary over a long period of time	The object of management should primarily be frequently changing costs, the level of which is determined annually in the planning process (control over the performance of planning, regulation and analysis functions).
	changed frequently	costs that change with a high degree of frequency	

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