E- Global Congress
Hosted online from Dubai, U. A. E., E - Conference.
Date: 30th June 2026
Website: https://eglobalcongress.com/index.php/egc
ISSN (E): 2836-3612

IMPROVING THE ACCOUNTING OF PRODUCTION COSTS OF PRODUCTS (WORKS, SERVICES) IN HIGHER EDUCATION INSTITUTIONS

Khudayberdiyev Nizomiddin Qurbonqulovich
Researcher of Tashkent State University of Economics,
nqx19791@gmail.com

ABSTRACT

This paper addresses the improvement of production cost accounting for products, works and services in higher education institutions under conditions of expanding financial autonomy. Based on the analysis of accounting practice, the paper identifies the key methodological problems and proposes a three-stage overhead cost allocation model grounded in activity-based costing, a three-dimensional analytical accounting structure, and an integrated cost-and-revenue accounting model enabling the determination of financial results by activity segments. The proposed solutions enhance the reliability of cost information and the validity of management decisions.

KEYWORDS: Cost accounting, cost calculation, overhead allocation, cost driver, higher education institution, activity segment, development fund, budget accounting.

1. INTRODUCTION

The financing models of higher education systems worldwide are undergoing a fundamental transformation. The share of state budget funding is decreasing, while the share of universities' own revenues — generated through the commercialization of research, provision of paid services, and contractual cooperation with industrial enterprises — is steadily increasing. In such conditions, the accurate accounting of costs related to the production and commercial activities of higher education institutions, the scientifically grounded formation of prime cost, and the reliable determination of financial results have become decisive conditions for ensuring their financial stability. In the Republic of Uzbekistan, consistent reforms are being implemented to expand the financial autonomy of higher education institutions. A number

ISSN (E): 2836-3612

of state universities have been granted the right to independently determine income and expenditure parameters. At the same time, this process imposes new requirements on the accounting system. According to Article 60 of the Budget Code of the Republic of Uzbekistan, the income transferred to a budget organization's development fund is determined as the positive difference between the proceeds from the sale of goods (works, services) and the costs of their production. Consequently, the accuracy of cost accounting is directly linked, at the level of law, to budget discipline: if costs are calculated incorrectly, the amount allocated to the fund is also determined incorrectly. The aim of this paper is to substantiate the directions for improving the accounting of production costs of products (works, services) in higher education institutions, focusing on overhead cost allocation and the analytical structure of cost accounting.

2. THEORETICAL BACKGROUND AND METHODS

The theoretical foundations of cost accounting and calculation have been extensively developed in international scholarship. C. Horngren, S. Datar and M. Rajan define cost as a resource sacrificed to achieve a specific objective and consider the cost accounting system as an information infrastructure for management decisions. C. Drury advances the principle of "different costs for different purposes". R. Kaplan and R. Cooper substantiate the activity-based costing (ABC) methodology, which allocates overhead costs according to cost drivers rather than traditional bases, significantly improving cost accuracy in the service sector. D. Hansen and M. Mowen demonstrate that the correct choice of driver decisively determines allocation accuracy.

Among researchers in Uzbekistan, A. Ostonokulov has studied the methodology of accounting and reporting of extrabudgetary funds of budget organizations, while K. Urazov and K. Akhmadjonov have examined responsibility-center accounting, and A. Khodjayev has investigated internal audit mechanisms in higher education institutions. However, the improvement of cost accounting for the production and commercial activities of higher education institutions as an integrated system, adapted to the conditions of dual-source (budget and extrabudgetary) financing, has not been a subject of special research.

ISSN (E): 2836-3612

The study employs systemic analysis, abstract-logical reasoning, modeling, grouping, and comparative analysis. The proposed models are substantiated through account correspondence and calculation formulas, drawing on the ABC methodology and the requirements of international public sector accounting standards (IPSAS 12, 18).

3. RESULTS AND DISCUSSION

Analytical structure of cost accounting. Analysis of accounting practice shows that in higher education institutions the costs of all activity types are accumulated in a single subaccount "Costs of goods (works, services)" in a generalized manner, which sharply limits the ability to determine the actual prime cost and profitability of each activity type. To address this, a three-level analytical structure is proposed: at the first level, three subaccounts corresponding to the activity groups are opened; at the second level, three mandatory analytical dimensions (order code, responsibility center, cost element) are introduced within each subaccount; at the third level, the full prime cost and profitability of each order are formed at the intersection of these dimensions. This solution requires no additional financial resources but raises the quality of cost and profitability information to a qualitatively new level.

Three-stage overhead cost allocation model. The current national standards require a "systematic allocation" of overhead costs but do not define the criteria for selecting the allocation base. In practice, this gap leads to three scientifically unfounded approaches being applied simultaneously in higher education institutions: setting a conditional percentage of the contract amount; allocation in proportion to direct wages; and, in some cases, not accounting for overhead costs at all. The first approach ignores the actual consumption of resources; the third artificially reduces the prime cost, which in turn overstates the income transferred to the development fund and may violate the requirements of the Budget Code. To fill this gap, a three-stage model based on the ABC methodology is developed (Figure 1).

E- Global Congress
Hosted online from Dubai, U. A. E., E - Conference.
Date: 30th June 2026
Website: https://eglobalcongress.com/index.php/egc
ISSN (E): 2836-3612

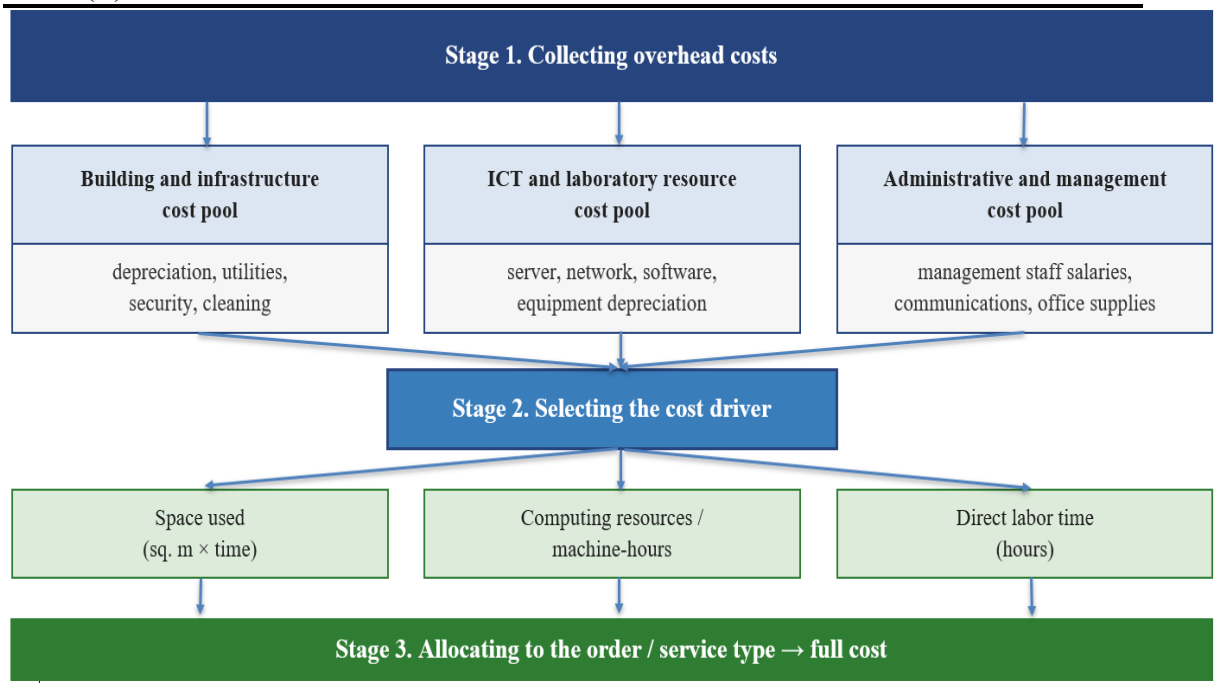

Figure 1. The author's three-stage model of overhead cost allocation

Source: developed by the author based on the ABC methodology of R. Kaplan and R. Cooper.

At the first stage, all overhead costs are grouped into three homogeneous cost pools (buildings and infrastructure; ICT and laboratory resources; administrative and management costs). The logic of such grouping is that each pool has its own consumption pattern. At the second stage, a cost driver — the factor that actually generates the costs — is selected for each pool. At the third stage, overhead costs are allocated to orders through a rate per driver unit. The allocation rate is determined by the following formulas:

$S_i = U_i / D_i$, $U_{ij} = S_i \times d_{ij}$

where S_i is the allocation rate for the i-th cost pool; U_i is the overhead costs accumulated in the i-th pool; D_i is the total volume of the i-th driver; U_{ij} is the overhead allocated to the j-th order; and d_{ij} is the volume of the i-th driver consumed by the j-th order. In a budget organization, overhead costs are first allocated between budget and extrabudgetary activities, and then the extrabudgetary portion is allocated among orders. The recommended cost pools and drivers are presented in Table 1.

E- Global Congress
Hosted online from Dubai, U. A. E., E - Conference.
Date: 30th June 2026
Website: https://eglobalcongress.com/index.php/egc
ISSN (E): 2836-3612

Table 1. Recommended overhead cost pools and drivers

Cost pool	Recommended driver	Driver unit
Buildings and infrastructure (depreciation, utilities, security)	Area used	square meter
ICT and laboratory resources	Volume of computing resources used	machine-hour
Administrative and management costs	Direct labor time	person-hour

Source: developed by the author.

These formulas transform the allocation process into a transparent and verifiable calculation: any auditor or supervisory body can independently verify the correctness of the allocation. This is particularly important in a budget organization, since the national regulation requires that the additional income-generating activity should not harm the volume and quality of work performed at the expense of budget funds — a requirement whose fulfilment can now be verified through calculation.

Integrated cost-and-revenue accounting model. The proposed cost accounting solutions, combined with the corresponding restructuring of revenue accounts, form a single integrated accounting model (Figure 2). Its essence is that for each activity group, three subaccounts — costs, revenues, and period costs — are maintained in parallel using the same analytical dimensions, and the segment result is formed at their intersection.

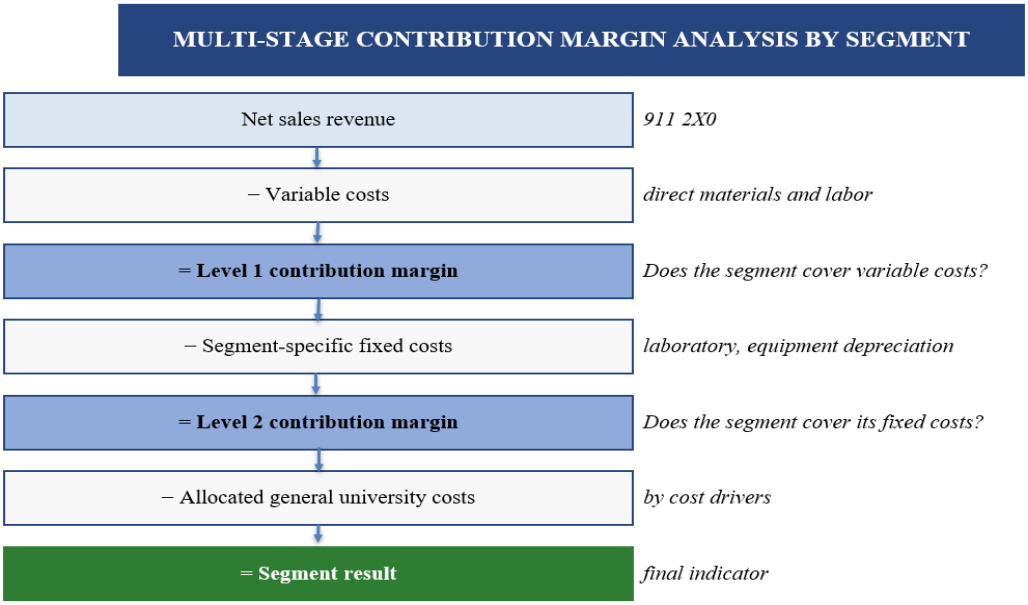

Figure 2. The author's integrated model of accounting for production costs and sales

Source: developed by the author.

In this model, each revenue subaccount forms a pair with the corresponding cost subaccount. This pairing enables the direct comparison of revenue and prime cost for each activity group — that is, the determination of the segment result. The model fully complies with the requirements of IPSAS 18 "Segment Reporting".

From a management perspective, this analytical capability eliminates the risk of an erroneous decision to close a loss-making segment: if a segment shows a loss at the level of the final result but its stage-2 marginal income (segment contribution) is positive — that is, it covers all of its direct costs and contributes to university-wide expenses — then closing it would worsen the overall financial result. The existing accounting system cannot reveal this nuance, since it determines only the gross or final result. This is precisely the analytical value of the proposed integrated model.

4. CONCLUSION

The study allows the following conclusions. First, the detailing of the cost subaccount into three activity groups and a three-dimensional analytical structure enables the determination of the actual prime cost and profitability of each order without additional financial resources. Second, the three-stage overhead allocation model based on cost drivers, substantiated through calculation formulas, transforms allocation into a transparent and verifiable procedure. Third, the integrated cost-and-revenue accounting model, based on the pairing of cost and revenue subaccounts, enables the determination of financial results by activity segments and complies with IPSAS 18. Fourth, the multistage marginal income methodology reveals hidden cross-subsidization and prevents erroneous management decisions regarding loss-making segments.

The proposed solutions are universal in nature and applicable to all budget organizations engaged in production and commercial activities, since they all form a development fund within the framework of the Budget Code. The development of a mechanism for the phased implementation of these proposals and a methodology for assessing their effectiveness constitute a promising direction for further research.

REFERENCES

1. Horngren C.T., Datar S.M., Rajan M.V. Cost Accounting: A Managerial Emphasis. 16th ed. New York: Pearson Education, 2021. 976 p.
2. Drury C. Management and Cost Accounting. 11th ed. London: Cengage Learning, 2020. 848 p.
3. Kaplan R.S., Cooper R. Cost and Effect: Using Integrated Cost Systems to Drive Profitability and Performance. Boston: Harvard Business School Press, 1998. 376 p.
4. Hansen D.R., Mowen M.M. Cost Management: Accounting and Control. 6th ed. South-Western: Cengage Learning, 2017. 832 p.
5. International Public Sector Accounting Standards Board (IPSASB). Handbook of International Public Sector Accounting Pronouncements. New York: IFAC, 2023.
6. Ostonokulov A. Improving the Methodology of Accounting and Reporting of Extrabudgetary Funds of Budget Organizations: monograph. Tashkent: VNESHINVESTPROM, 2021. 208 p.
7. Budget Code of the Republic of Uzbekistan, 2013, Article 60. URL: https://lex.uz/docs/-2304138
8. IFAC. Implementing Accrual Accounting in the Public Sector: A Guide for Governments. New York: IFAC, 2021. 48 p.