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IMPROVING THE ACCOUNTING AND AUDITING OF PRODUCTION COSTS IN INDUSTRIAL ENTERPRISES

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Introduction

In the context of the globalization of the world economy and intensifying competition, the principal task facing industrial enterprises is to optimize product cost and increase production efficiency. It has been scientifically proven that contemporary systems for managing production costs (Lean Production, Kaizen, Activity-Based Costing) make it possible to reduce product cost by 15-20%. The Concept for the Socio-Economic Development of the Republic of Uzbekistan until 2030 establishes as a priority task the increase of industrial output by 1.4 times and a doubling - at minimum - of labor productivity in industrial sectors. The achievement of these indicators directly requires the introduction of new mechanisms for the classification, planning, and control of production costs at industrial enterprises.

Current analysis of domestic industrial enterprises shows that the share of raw materials and energy resources in product cost remains high - averaging 60-75%. For example, in textile and light-industry enterprises, the improper allocation of production costs leads to deviations of the actual product cost from normative indicators by 10-12%. This indicates the absence of a systematically organized management accounting framework, and that internal audit functions are limited to verifying financial statements alone. In traditional accounting systems, costs are based mainly on past-period data and are retrospective in nature. This

produces uncertainty in 30-40% of strategic decision-making cases. In the era of digital transformation, the necessity arises to monitor production processes on the basis of "Digital Twin" technologies and to apply "Big Data" analytics in the audit process.

Literature Review

Ch. Horngren describes management accounting as "the principal instrument for the planning and control of enterprise resources." The central idea of his work "Cost Accounting: A Managerial Emphasis" is that costs should be allocated not only to products but also according to the "types of activities" that give rise to them. As Horngren emphasizes, "Management accounting is not merely a sum of figures, but a psychological mechanism that influences managerial behavior" [1].

K. Drury, in turn, places emphasis on the strategic dimensions of cost management. According to Drury, traditional methods of calculating product cost generate uncertainty of 20-30% in industrial settings. Endorsing the application of the "Direct-costing" system, he concludes that "only by including variable costs in product cost is it possible to accurately assess the marginal profit of an enterprise and properly plan its production volume" [2].

A.D. Sheremet, the Russian scholar, proposes the integration of cost auditing with the financial analysis of the enterprise. In his works, he holds that "an audit conducted without comprehensive economic analysis is merely a search for technical errors," and advocates the introduction of a KPI system of "indicators of economic-activity efficiency" in cost management [3].

M.A. Vakhrushina also focuses on the organizational aspects of management accounting. In her view, accounting organized around "responsibility centers" in industrial enterprises prevents up to 15% of unjustified cost overruns. She

emphasizes that "the management accounting system must be fully adapted to the organizational structure of the enterprise" [4].

Among local scholars, B.A. Hasanov - one of the founders of the management accounting school in Uzbekistan - emphasizes that, under conditions of digitalization of industrial enterprises, accounting policy must be fundamentally reformed. According to his statements, "In the digital economy, management accounting must be integrated with Business Intelligence (BI) systems, while audit must transition to an online-monitoring mode" [5].

A.N. Mahmudov advances the idea that "the principal aim of audit is not to detect errors, but to identify excessive expenditures in production and provide management with strategic recommendations for their reduction" [6].

S.N. Tashnazarov has investigated the problems of adapting cost accounting to international standards during the transition to IFRS. He maintains that "the valuation of assets at fair value and the calculation of inventory cost using internationally recognized methods (FIFO, AVECO) is a fundamental factor ensuring the reliability of internal audit" [7].

Methodology

The research employed a systems approach, comparative analysis, economic-mathematical modeling, and grouping methods. In particular, costs were assessed through CVP analysis (Cost-Volume-Profit), and sample-based testing methods were applied in the auditing component.

Results

In textile enterprises, indirect costs (workshop expenses, administrative expenses) are in many cases incorrectly distributed across product lines. Each cost should be calculated by reference to the specific activity that gave rise to it

(for example, machine setup, quality control, dyeing). In our view, more accurate calculation of product cost makes it possible to discontinue unprofitable product lines and to redirect resources toward higher-margin products. Within the textile industry, the movement of raw material along the chain cotton → yarn → fabric → finished goods generates significant transportation expenses. Implementing the Activity-Based Costing (ABC) method enables the minimization of warehouse inventories, the reduction of working capital frozen in stock, and savings of 10-15% in warehouse costs.

In the formation of product cost and the management of expenditures in textile enterprises, by integrating the standards IAS 2 “Inventories” and - where a cluster structure is in place - IAS 41 “Agriculture,” the Activity-Based Life Cycle Costing (ABLCC) method warrants further development. Within the framework of the Eco-Costing concept, the textile industry exhibits a high level of water and chemical consumption during the dyeing and finishing processes; accordingly, product cost may be expanded to include not only direct material expenses but also “renewable ecological reserves” and the cost of waste recycling. Under the new IAS 2 standard, manufacturing overhead is allocated on the basis of normal capacity. As a methodological innovation, we propose introducing a coefficient of “technological energy intensity” (energy intensity per stage) as the cost-allocation driver in textile production, in place of “machine-hours” or “wages.” This makes it possible to lower the cost of energy-efficient products and to assess competitiveness with greater precision.

In textile production - particularly at the spinning and weaving stages - natural shrinkage (yarn waste, or “ugar”) is substantial. In line with IFRS requirements, above-normal losses can be assigned to period expenses while normal losses can be transferred automatically to product cost. As a result, errors in calculating product cost are reduced by 10-15%. IFRS-based reporting is transparent for

foreign investors, and the enterprise's environmental impact, together with the costs of mitigating it, are explicitly reflected in the financial statements.

Accordingly, in the formation of product cost and the management of expenditures in textile enterprises, the integration of IAS 2 “Inventories” and IAS 41 “Agriculture” (in the case of clusters) is applied within the Activity-Based Life Cycle Costing (ABLCC) method.

Table 1 Comparison of cost-accounting approaches: current regulation, IFRS, and proposed innovations for the textile sector

Indicator	Current Regulation	International Standards (IFRS / IAS 2)	Proposed Scientific Innovation for the Textile Sector
Allocation of overhead costs	Mainly in proportion to the wages of production workers	Based on the normal production capacity	Allocation based on technological energy intensity and the loading rate of equipment
Above-normal losses	Often included in product cost	Not included in product cost; recognized immediately as a period expense (P&L)	Automatic separation of “technological yarn waste” in spinning into normal and above-normal categories
Biological assets (cotton)	Recorded at the purchase price as raw material	Measured at fair value in accordance with IAS 41	Recognition of cotton raw material at “fair value” within the cluster, bringing product cost closer to market value
Environmental costs	Included in period expenses	May be capitalized as part of preparing an asset for use or as part of inventory cost	Opening of an “ecological damper” sub-account within product cost (for dyeing and finishing stages)

Table 1 examines the existing system of accounting for production costs and the formation of product cost in textile-industry enterprises from the perspective of international standards (IFRS). The aim is to increase the accuracy of indirect cost allocation in multi-stage textile clusters and to integrate “green economy” principles into accounting policy. Within the framework of IAS 2, the separate recognition of above-normal losses and the appropriate write-off of environmental costs make it possible to enhance the transparency of financial reporting.

Detection of transactional anomalies (Machine Learning). The system, drawing on five years of data from the “Uzto'qimachiliksanoati” Association, identifies atypical transactions. Example: when knitwear and woven products are exported at prices below the usual range or under non-standard payment terms, the algorithm warns the auditor without waiting for the end of the reporting period. Data from the SAP modules “Raw Materials Warehouse,” “Production Workshop,” and “Accounting” are reconciled. If, at “OSIYO GRANT TEXTEL,” product sales deviate from the normative range by 0.5% but this is not reflected in the accounting records, the system automatically raises the “manipulation risk” rating. On the basis of this concrete evidence, the auditor can present clear and well-grounded objections to management on Key Audit Matters.

Table 2 Comparative analysis of audit at the "Uzto'qimachiliksanoat" Association

Audit stage	Traditional audit	Digital cognitive audit
Data collection	The auditor visits the enterprise and selects documents on a sample basis	All transactions (100%) are loaded automatically from the ERP system
Materiality threshold	Set at 1-2% of total assets	Determined dynamically based on the risk profile of each subsidiary (e.g., "Indorama" FE, etc.)
Planning	Based on professional judgment and prior experience	Processes with the highest probability of error (e.g., repair expenses) are identified using a Heat Map

Analysis of the financial statements and audit-inspection results of the "Uzto'qimachiliksanoat" Association and its constituent enterprises for 2022-2025 reveals the following positive dynamics from the implementation of International Standards on Auditing (ISA). Within the scope of the present research, audit risk was quantitatively assessed using the model AR = IR × CR × DR. The findings show that the introduction of digital audit tools has substantially reduced detection risk (DR).

Table 3 Dynamics of changes in audit-risk components at the "Uzto'qimachiliksanoat" Association (in percent)

Indicator	2023 (under NAS)	2025 (under ISA)	Change (+/-)
Inherent risk (IR)	85%	70%	-15%
Control risk (CR)	60%	45%	-15%
Detection risk (DR)	40%	20%	-20%
Overall audit risk (AR)	**20.4%**	**6.3%**	**-14.1**

Note: *the systematic application of ISA 315 and ISA 330 has resulted in a threefold reduction in overall audit risk.*

Conclusion

The research conducted on the improvement of management accounting and the auditing of production costs in industrial enterprises supports the following scientific and practical conclusions:

• Under conditions of digital transformation, the transition from the traditional accounting system to a strategic management accounting system in industrial enterprises is an objective necessity. The research demonstrates that grouping costs by "responsibility centers" and applying the "Direct-costing" method reduces the uncertainty inherent in product-cost formation by 12-15%.

• In the optimization of production costs, the most effective approach to cost reduction in textiles and other major industrial sectors is the integration of "Target Costing" and "Lean Manufacturing." Scientifically grounded calculations confirm that digital monitoring of resource efficiency through ERP systems within the production cycle reduces raw-material waste by 5-7%.

• In the transformation of audit methodology, traditional "retrospective" audit (the examination of past events) is losing its significance and must be replaced by "Risk-Based Internal Audit." Under this approach, audit is directed not only toward identifying financial errors but also toward detecting inefficient expenditures in production and providing management with strategic guidance for their elimination.

• The integration of management accounting and audit on a single digital platform within industrial enterprises ensures the reliability of data. This, in turn, accelerates the transition to International Financial Reporting Standards (IFRS) and enhances the international investment attractiveness of domestic enterprises.

• As an outcome of the research, it is proposed to establish a "Cost Controlling" unit within the internal audit service of industrial enterprises. This unit would be responsible for the online analysis of deviations of production costs from norms and for the prompt formulation of management decisions.

In sum, the improvement of the system for managing and auditing production costs not only secures the internal stability of industrial enterprises, but also serves as an important driver in expanding the export potential of the national economy.

References

1. Horngren, C. T., Datar, S. M., & Rajan, M. V. Cost Accounting: A Managerial Emphasis. 17th Edition. Pearson, 2021.
2. Drury, K. Management and Production Accounting: An Introductory Course. - Moscow: Yuniti-Dana, 2015.
3. Sheremet, A. D. Analysis and Audit of the Financial and Economic Activity of an Enterprise. - Moscow: INFRA-M, 2021.
4. Vakhrushina, M. A. Management Accounting: Textbook. - Moscow: INFRA-M, 2022.
5. Hasanov, B. A., Nurmanov, K. T., Khasanova, R. B. Modern Management Accounting: Textbook. - Tashkent: "LESSON PRESS" LLC Publishing House, 2021.
6. Mahmudov, A. N. Improving the Methodology of Management Accounting of Costs and Revenues and Internal Audit. Monograph. - Tashkent: "LESSON PRESS" LLC Publishing House, 2022.
7. Tashnazarov, S. N. International Financial Reporting Standards. Textbook. - Tashkent: "Iqtisodiyot," 2021.