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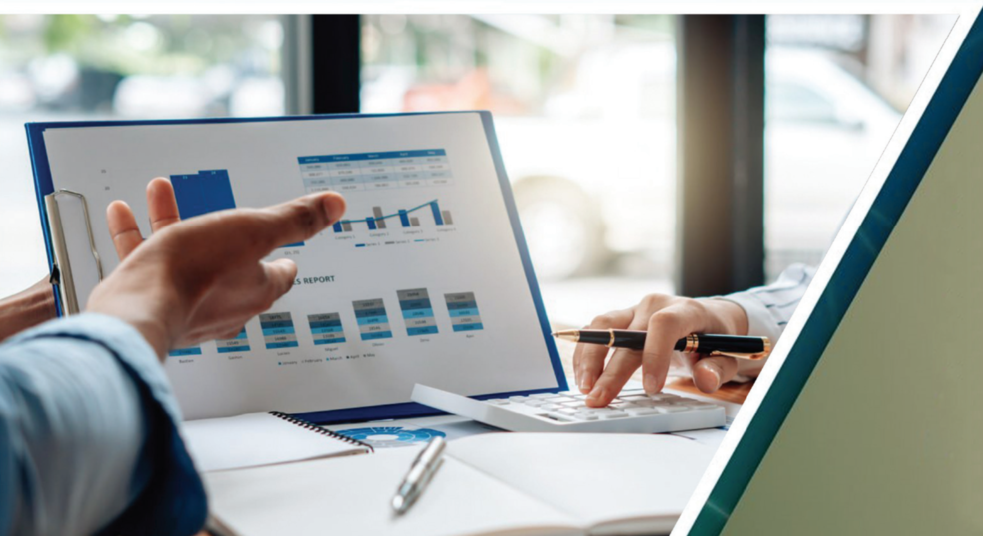

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CONTENTS

CONTENTS

CONTENTS

CONTENTS

CONTENTS

CONTENTS

THE STATE OF MANAGEMENT INFORMATION FORMATION ACROSS BUSINESS PROCESSES, COSTS AND SEGMENTS

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Abstract. *The article examines the current state of management information formation in the dimensions of business processes, costs and segments. It identifies the typical fragmentation of accounting data — repeated manual entry, incompatible analytical codes and the absence of a continuous link between primary registration and management control — and substantiates its causes. A seven-layer management accounting and analytical system is developed, integrating accounting processes from the initial recording of business transactions through to planning and management control within a single information space. The main conclusion is that the quality of management information depends less on the sophistication of individual costing techniques than on the architectural continuity between the layers through which data passes.*

Keywords: *management information, business processes, cost dimensions, operating segments, seven-layer system, information space, analytical attributes, IFRS 8, activity-based costing, management control.*

Аннотация. *В статье исследовано современное состояние формирования управленческой информации в разрезе бизнес-процессов, затрат и сегментов. Выявлена типичная фрагментация учётных данных — повторный ручной ввод, несопоставимость аналитических кодов, отсутствие непрерывной связи между первичной регистрацией и управленческим контролем — и обоснованы её причины. Разработана семиуровневая управленческая учётно-аналитическая система, объединяющая учётные процессы от первичной регистрации хозяйственных операций до планирования и управленческого контроля в едином информационном пространстве. Основной вывод: качество управленческой информации определяется не сложностью отдельных методов калькулирования, а архитектурной непрерывностью связей между уровнями прохождения данных.*

Ключевые слова: *управленческая информация, бизнес-процессы, разрезы затрат, операционные сегменты, семиуровневая система, единое информационное пространство, аналитические реквизиты, IFRS 8, попроцессное калькулирование, управленческий контроль.*

INTRODUCTION

Management decisions are only as good as the information on which they rest. In modern enterprises this information is produced by several loosely connected sources: the financial accounting system, production and warehouse systems, budgeting spreadsheets and ad hoc analytical files. Each source uses its own classifiers, its own periodicity and its own level of detail. As a result, the same economic fact may appear in several places with different values, and reconciling them consumes a substantial part of the accounting department's time.

This fragmentation becomes particularly visible when information is required simultaneously in three dimensions — by business process, by cost object and by operating segment. A process dimension answers the question “where is value created and where is it consumed”; a cost dimension answers “what does the output cost”; a segment dimension answers “which part of the business earns the return”. In practice, these three dimensions are frequently maintained in separate systems that cannot be aggregated without manual intervention.

The aim of the study is to analyse the state of management information formation across business processes, costs and segments and to substantiate an architecture that unites accounting processes within a single information space. The scientific novelty consists in the development of a seven-layer management accounting and analytical system that integrates accounting processes from the initial recording of business transactions through to planning and management control.

LITERATURE REVIEW

The conceptual basis for linking accounting information with management dimensions is provided by the IASB Conceptual Framework for Financial Reporting (2018), which defines relevance and faithful representation as fundamental qualitative characteristics, and comparability, verifiability, timeliness and understandability as enhancing characteristics. These characteristics are formulated for general purpose financial reporting, but they are equally applicable to internal information: a manager cannot make a sound decision on the basis of data that is neither timely nor verifiable.

Within the IFRS system, IFRS 8 “Operating Segments” is the standard that most directly connects external disclosure with internal information. It requires that reportable segments be identified on the basis of the internal reports regularly reviewed by the chief operating decision maker, and that segment measures be reconciled to the corresponding amounts in the financial statements. This effectively makes the architecture of internal information a matter of external reporting quality.

The process dimension of management information is grounded in the activity-based costing literature. Cooper and Kaplan demonstrated that allocating overheads on the basis of activities rather than volume-based drivers substantially changes product profitability estimates. Kaplan and Anderson subsequently proposed time-driven activity-based costing, which reduces the data collection burden by using time equations. Horngren, Datar and Rajan, as well as Drury, systematise cost classification by behaviour, traceability and decision relevance, showing that the choice of cost object determines the design of the analytical structure.

The requirements for the informational environment itself are addressed by the COSO Internal Control — Integrated Framework (2013), where information and communication constitute an independent component of internal control, and by data quality models such as ISO/IEC 25012, which define accuracy, completeness, consistency, credibility and currentness as measurable characteristics of data. CIMA and AICPA’s Global Management Accounting Principles (2015) frame the same issue from the management accounting side, emphasising relevance of information and stewardship of trust.

In Uzbekistan, the Law “On Accounting” (No. LRU-404 of 13 April 2016[1]) and Presidential Resolution No. PQ-4611 of 24 February 2020 established the transition of large entities to IFRS. These acts regulate external reporting; the architecture of internal management information remains outside their scope, which creates the regulatory gap addressed in this article.

The comparative review shows that costing techniques and segment disclosure requirements are well developed separately, whereas the architectural question — how a single transaction travels from its source document to a management decision without losing identity — has received considerably less systematic treatment.

RESEARCH METHODOLOGY

Methodologically, the study applies theoretical generalisation, comparative analysis, process analysis and architectural modelling. The content of IFRS requirements, international management accounting principles and national regulatory acts was analysed, on the basis of which seven functional layers of the management accounting and analytical system were distinguished and their interconnection was expressed as a model.

ANALYSIS AND RESULTS

Typical state of management information formation

The analysis identified four recurring weaknesses in the way management information is currently produced. First, multiple registration: the same transaction is entered manually into the accounting system, into the production module and into a budgeting spreadsheet, so that discrepancies are introduced at the point of entry rather than at the point of calculation. Second, incompatible classifiers: cost centres, product codes and segment codes are maintained in separate reference books that are not mapped to one another. Third, the loss of the process dimension: costs are collected by department rather than by activity, which makes it impossible to identify where value is actually consumed. Fourth, the break between reporting and control: deviations are calculated but not linked to a responsible person or a follow-up action.

1 https://lex.uz/docs/-2931253?otherlang=1

The seven-layer management accounting and analytical system

To overcome these weaknesses, a seven-layer system is proposed in which each layer performs a distinct function and passes a defined output to the next (Figure 1).

Seven-layer management accounting and analytical system

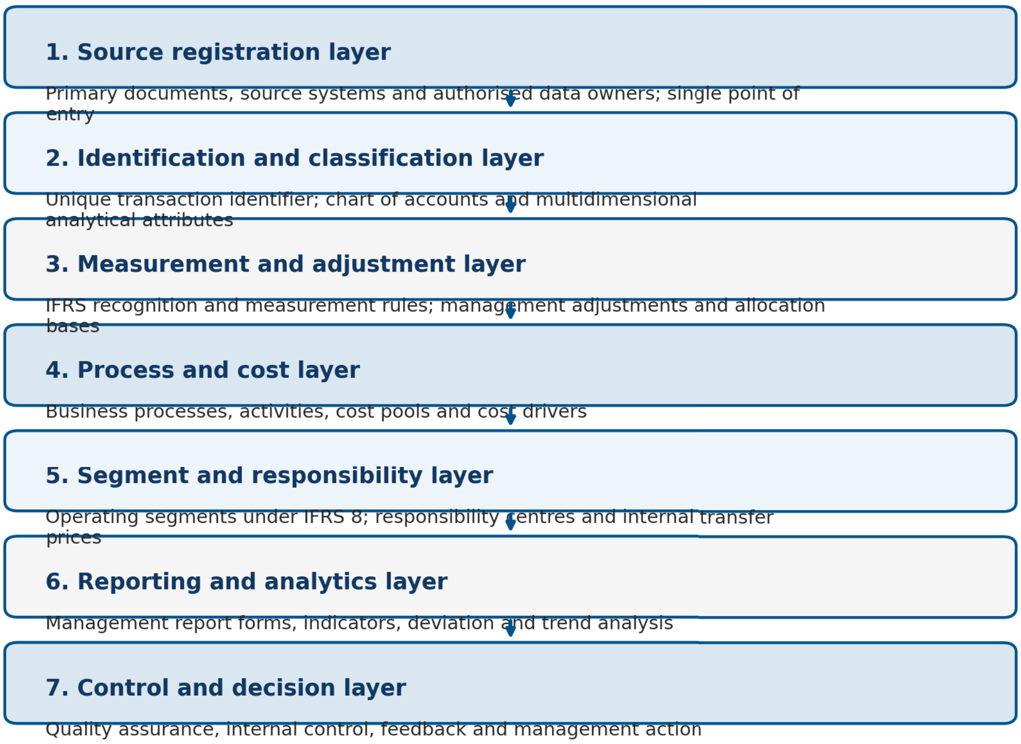

Figure 1. Seven-layer management accounting and analytical system
Source: developed by the author.

The functional content of the layers is summarised in Table 1.

Table 1.
Functions, outputs and control points of the seven layers

Layer	Function	Output	Key control point
1. Source registration	Single-point capture of the transaction	Validated source record	Authorisation of the data owner
2. Identification	Assignment of a unique identifier and analytical attributes	Coded transaction	Completeness of mandatory attributes
3. Measurement	Application of IFRS recognition and measurement rules	Measured amount	Reconciliation with the general ledger
4. Process and cost	Assignment to activities, cost pools and drivers	Process and product cost	Review of allocation bases
5. Segment and responsibility	Aggregation by segments and responsibility centres	Segment result	Elimination of internal turnover
6. Reporting and analytics	Formation of report forms and indicators	Management report	Compliance with the reporting calendar
7. Control and decision	Deviation analysis, feedback and action	Management action	Follow-up on implementation

Source: developed by the author.

The architectural principle of the system is that no layer may receive data other than from the preceding layer. This rule eliminates parallel data channels — the main source of inconsistency in practice — and makes every reported figure traceable back to its source document.

The three dimensions within a single information space

Once the layers are in place, the three dimensions cease to be separate systems and become different aggregations of the same coded transactions. The process dimension is obtained by grouping records by activity; the cost dimension, by grouping the same records by cost object; the segment dimension, by grouping them by segment attribute. Because the aggregations share a common source, they are reconcilable by construction, which directly satisfies the reconciliation requirement of IFRS 8.

The results suggest that the problem of management information quality is primarily architectural rather than computational. Enterprises frequently invest in sophisticated costing methods while leaving the data pathway fragmented; the resulting figures are precise in method but unreliable in substance. The proposed layered architecture reverses the priority: it first secures the continuity of the pathway and only then refines the calculation techniques applied within it.

For enterprises in Uzbekistan the practical significance is threefold. First, the transition to IFRS creates a natural occasion for redesigning internal information architecture rather than merely reformatting external statements. Second, a coherent layer structure improves the quality of segment disclosure under IFRS 8, because internal and external figures are derived from the same records. Third, an explicit control point at each layer strengthens the information and communication component of internal control.

The limitation of the study is that the proposed architecture has been substantiated conceptually and by expert judgement; its economic effect requires empirical verification through implementation in enterprises of different industries and sizes.

CONCLUSIONS AND RECOMMENDATIONS

The study leads to the following conclusion: management information formation across business processes, costs and segments should be organised as a continuous seven-layer system — source registration, identification, measurement, process and cost, segment and responsibility, reporting and analytics, and control and decision — operating within a single information space. The three management dimensions are not separate systems but different aggregations of the same identified transactions.

Practical recommendations: (1) establish a single point of entry for each type of transaction and prohibit parallel manual registration; (2) map cost centre, product and segment classifiers into a unified reference structure; (3) introduce a mandatory set of analytical attributes for every transaction; (4) assign an explicit control point and a responsible owner to each layer; (5) link deviation analysis to a documented follow-up procedure. These measures transform management information from a set of disconnected calculations into an integrated and verifiable analytical system.

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