

TRANSPARENT FINANCIAL ARCHITECTURE AS A TOOL FOR REDUCING FRAUD RISKS

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Abstract. The article is devoted to the study of transparent financial architecture as a tool for reducing fraud risks in the activities of enterprises. The purpose of the study is to substantiate approaches to building a Clear Finance Architecture based on the integration of ERP automation and corporate policies in order to reduce fraud risks in the activities of the enterprise. In the course of the scientific study, general scientific methods of cognition were used: analysis, synthesis, induction, deduction, modeling, generalization and a systems approach. The results of the study show that building a transparent financial architecture at the enterprise involves the structural integration of five key components: strategic positioning of finance, process integration and automation (based on ERP systems), data and analytics, technological basis (AI, ML, blockchain) and a control and risk management system. The emphasis is on creating a single information environment for financial and operational data, which contributes to the centralization of accounting, elimination of fragmentation of information flows and automation of basic control procedures. Special attention is paid to the use of advanced analytics and intelligent tools in ERP systems, which provide for the detection of anomalies and atypical transaction patterns, and also contribute to the transition from periodic control to continuous monitoring of financial risks. The importance of implementing formalized corporate policies, internal control, audit systems and harmonizing the use of ERP with the principles of corporate governance is determined. It is studied that risk management should include assessing vulnerable areas, regularly updating control procedures and training personnel in detecting and preventing fraud. It is concluded that the synergy of ERP, analytics, technologies and internal policies forms a holistic financial architecture focused on preventing financial abuse and increasing transparency, which forms the practical significance of the study through the formation of a methodological basis for building an effective automated financial system of the enterprise.

Keywords: financial architecture, fraud, ERP, control, analytics.

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Introduction

The modern business environment is characterized by a simultaneous increase in the volume of financial transactions, the complexity of organizational structures and the strengthening of requirements for the transparency of companies' activities. Under such conditions, the financial function is increasingly faced with challenges related not only to the efficiency of data processing, but also to ensuring trust in financial information and the stability of management decisions. As shown by the study by P. Gomber, J. Koch and M. Siering, the digitalization of finance changes the logic of the functioning of financial systems, bringing to the fore issues of integration, analytical validity and risk control [7]. In turn, this means that traditional fragmented approaches to the organization of financial management are increasingly less responsive to the needs of modern organizations. At the same time, the growth of the complexity of financial processes is accompanied by an increase in the vulnerability of companies to various forms of abuse and fraud, especially in the context of multi-channel operations, distributed teams and a large number of information systems.

Data fragmentation and a significant proportion of manual procedures create «blind zones» of control, within which risky operations can remain unnoticed [5]. In this context, the problem of reducing fraud risks acquires not only accounting, but also strategic importance, as it directly affects financial stability, reputation and trust from stakeholders. At the same time, the practice of corporate governance shows that purely technical or, conversely, only organizational measures rarely give a sustainable result in the field of combating financial abuse. As shown by the study of D. Byrne, effective fraud prevention requires a combination of formalized rules, supervisory mechanisms and a clearly structured accountability system [3]. Therefore, an urgent scientific and applied task is to find such approaches to organizing the financial function that allow integrating the technological capabilities of modern management systems with institutional mechanisms of corporate policies, forming a holistic basis for increasing transparency and reducing fraud risks.

Literature Review

The issue of transparent financial architecture is sufficiently researched in foreign scientific literature. It was studied by authors D. Appelbaum, A. Kogan, M. Vasarhelyi, Z. Yan [1], who showed that combining business analytics with corporate information systems allows to increase the accuracy, controllability and accountability of financial processes. The work of Khatib S.F.A., Mustafa Z., Abbas A.F. [9] is also of great importance, where the relationship between digital transformation and financial sustainability is analyzed, especially in the context of the architectural construction of financial systems. Digital financial instruments in a broad context were considered by P. Gomber, J.A. Koch, M. Siering [7], drawing attention to the potential of FinTech to reduce manipulation in the financial environment. The publication Rossum [2] reveals the concept of building an AI-oriented financial architecture that combines flexibility, transparency and security.

Also important is the study of ERP systems and their importance for reducing fraud risks. This issue was addressed by the studies of S.V. Grabski, S.A. Leech, P.J. Schmidt [8], who carried out an in-depth analysis of the evolution of ERP in the context of accounting and reporting practices, focusing on strengthening control through automation. Practical mechanisms for preventing fraud using ERP are disclosed in the publication Grade.app [5], as well as in the material Brander.ua [4], which presents modern approaches to the structure and functionality of ERP. S. Shiwakoti [10] emphasizes the role of intelligent ERP solutions in strengthening financial management, in particular through the automatic detection of suspicious transactions.

Studies of the impact of corporate policy and internal control on reducing fraud are presented in the works of R. Flowerastia, E. Trisnawati, H. Budiono [6], who proved that the integration of corporate governance with internal control creates a reliable environment for

preventing abuse. Similar conclusions are presented by E. Suhayati [11], emphasizing the importance of implementing system control in organizational structures. The practical aspect of the problem is highlighted by D. Byrne [3], emphasizing the importance of transparent reporting and ethical standards in preventing fraud at the corporate governance level.

Despite the sufficient amount of literature on this topic, there is a lack of systematic material that would integrate the concepts of financial architecture, automation and corporate governance in the light of fraud prevention.

The purpose of the study is to substantiate approaches to building a Clear Finance Architecture based on the integration of ERP automation and corporate policies in order to reduce the risks of fraud in the activities of the enterprise.

Research Results

The concept of Clear Finance Architecture should be considered as a generalized concept of building an organization's financial function, focused on transparency, process integration and the use of digital technologies to support management decisions. As shown by the research of P. Gomber, J. Koch and M. Siering, modern financial systems are developing in the direction of digitalization, data integration and increasing the role of analytics, which forms the basis for rethinking financial architecture as a holistic system for managing financial flows and risks [7]. In this context, Clear Finance Architecture is not a term assigned to one author in the classical sense, but rather the result of the evolution of approaches to financial management under the influence of digital transformation. At the same time, as noted in the materials of Rossum.ai, modern financial architecture should be ready to use artificial intelligence, data integration and process automation, which is directly related to the idea of a "transparent" and managed financial system [2]. Therefore, Clear Finance Architecture can be defined as a conceptual model for organizing financial processes, data and technologies, aimed at ensuring transparency, manageability, analytical capabilities and reducing risks, in particular fraud risks.

At the same time, within the practical implementation of the principles of transparent financial architecture, a structured and formalized approach is represented by Clear Finance Architecture (CFA-Method) – the author's methodology of Natalia Lavryk in the field of corporate finance. Unlike general conceptual approaches to financial architecture, CFA-Method functions as an integrated management system that combines internal instructions for accreditation of counterparties, credit policy, regulations of contractual work, procurement and payment procedures, as well as automated control mechanisms of the SAP ERP system into a single regulatory and technological framework. In this architecture, key management rules – the procedure for checking counterparties, approving contracts, setting limits, payment terms, control of specifications and shipments – are not only formally enshrined in regulatory documents, but also implemented in the information system in the form of mandatory checkpoints, without which the conduct of operations is technically impossible.

CFA-Method is aimed at transforming corporate finance into an integrated strategic tool for capital protection and risk management. Its conceptual core is to build a financial and management architecture in which each business transaction involves the sequential passage of formalized procedures: from collecting and storing the counterparty's registration documents in SAP and checking them through external information systems and security services to setting credit limits, determining payment terms, and blocking transactions in case of their violation. A similar approach is applied to contractual work: the use of standardized contract templates, mandatory multi-level approval of non-standard contracts, recording the history of changes in the system, and the use of electronic signatures transform the contractual process into a formalized, traceable, and controlled element of the financial architecture.

The methodological structure of CFA-Method is based on the phased implementation of institutional and technological control mechanisms. At the first stage, policies and processes are formalized by developing and implementing internal instructions (on accreditation of counterparties, contractual work, procurement, credit control, payment procedures), which creates a regulatory framework for managing financial flows. At the second stage, these rules are integrated into the SAP ERP environment, where they are implemented in the form of system restrictions: an unaccredited counterparty, an unapproved contract or an exceeded limit block the possibility of creating a specification, making a delivery or making a payment. At the third stage, functional delimitation of financial circuits (accounting, taxation, management reporting, independent control) takes place, which increases the reliability of internal control and reduces the risks of conflicts of interest.

Additionally, the CFA-Method is implemented through mechanisms of automated credit control (in particular, using the FIFO principle), control of SPOT/FORWARD specifications, centralization of all payments within the ERP system and formalized procedures for approving purchase applications in accordance with authority matrices. The system provides automatic detection of deviations and blocking of risky operations in a mode close to real-time, and also forms the basis for continuous analytics and risk-oriented reporting. In conclusion, the CFA-Method can be characterized as an applied, procedurally and technologically formalized implementation of the Clear Finance Architecture concept, within which instructions, policies and digital controls form a single architecture of preventive financial management aimed at protecting capital, reducing fraud risks and increasing the level of financial transparency.

Within this concept, it is advisable to identify the key components that form its functional content. A summary of such elements is given in Table 1.

Table 1 – Components of Clear Finance Architecture

Component	Content and purpose
Strategic positioning of finance [2]	defines the role of the financial function in creating strategic value, aligns operational and strategic financial objectives, and ensures consistency with corporate strategy;
Process integration and automation (ERP) [4]	enables the integration of financial and operational processes within a single platform, reduces data fragmentation, and increases business process transparency through automation and centralized information;
Data and analytics [1]	focuses the financial function on using descriptive, predictive, and prescriptive analytics, integrates financial and non-financial information, and supports data-driven managerial decisions;
Technological foundation (AI, ML, blockchain) [9]	facilitates a shift toward data-driven management, improves forecasting accuracy, enhances risk detection capabilities, and ensures transparency in financial operations;
Control and risk management system [5]	establishes a continuous audit trail, supports segregation of duties, enables real-time operations monitoring, and ensures proactive detection of anomalies in financial flows;

Note: compiled by the author based on sources [1; 2; 4; 5; 7; 9]

Transparent Finance Architecture appears as an integrated system in which strategy, processes, data and technologies are interconnected and aimed at increasing the transparency and manageability of the financial function. In the modern sense, Clear Finance Architecture involves a combination of two complementary areas – the integration of automation based on ERP systems and the implementation of corporate policies aimed at increasing the transparency, accountability and manageability of financial processes. If we focus on the first element, the ERP system is considered as a comprehensive software solution for integrated

enterprise resource management, which combines financial, production, logistics and personnel processes within a single information space [4]. Based on the study by Brander.ua [4], such integration provides data centralization, a reduction in errors and increased consistency of management decisions. However, as shown by the Grade.app study [5], the key advantage of ERP in the context of combating fraud is the formation of a continuous audit trail, automation of control procedures and a reduction in the share of manual operations, which limits the possibilities for manipulation and concealment of abuses.

The advantages of ERP systems in terms of reducing fraud risks are manifested, in particular, through the integration of processes, the implementation of the principle of separation of duties, automated verification mechanisms and the ability to monitor operations in real time [5]. In turn, as D. Appelbaum and co-authors note, corporate information systems and analytics transform the financial function from simple accounting to a platform for supporting management decisions, which strengthens the control and analytical component of management [1]. Therefore, ERP within the Clear Finance Architecture performs not only an accounting, but also a preventive function, creating a technological basis for reducing the likelihood of financial abuses.

The components and key modules of the ERP system, as well as their role in reducing fraud risks, are summarized in Table 1 (see Table 2).

Table 2 – Key modules of the ERP system and their role in reducing fraud risks

ERP system module	Functional purpose and contribution to fraud risk reduction
Financial module [4]	ensures cash flow accounting, budgeting, and reporting within a unified environment, which creates a continuous audit trail and makes it more difficult to conceal unauthorized transactions;
Procurement and supplier management module [5]	implements automated approval procedures, three-way document matching, and control over vendor creation, reducing the risk of fictitious deliveries and duplicate payments;
Inventory and warehouse management module [4; 5]	provides transparent real-time tracking of material assets, minimizing opportunities for asset misappropriation and inventory manipulation;
Sales and customer settlements module [4]	ensures transaction traceability from order to payment, lowering the risk of unauthorized discounts, altered contract terms, or hidden revenue adjustments;
HR and access management module [4; 5]	supports a role-based access model and segregation of duties principle, limiting the concentration of authority in a single individual and reducing opportunities for misconduct;

Note: compiled by the author based on sources [1; 4; 5]

Therefore, ERP integration within the Clear Finance Architecture creates a structured and transparent system for managing financial and operational processes, in which each module performs not only a functional, but also a control role. At the same time, such a technological basis is logically complemented by corporate policies that form the organizational framework for using these tools and enhance their impact on reducing fraud risks.

Corporate policies within the Clear Finance Architecture perform a regulatory and organizational function that complements technological control and automation tools. As shown by D. Byrne's research, good corporate governance creates an environment of transparency and accountability in which the risks of fraud and corruption are reduced due to clearly defined rules, procedures and oversight mechanisms [3]. In turn, based on the research of Flowerastia R., Trisnawati E. and Budiono H., corporate policies should be considered as an institutional framework that combines a culture of integrity, internal control

and supervisory functions into a single system for preventing and detecting financial abuse [6]. At the same time, as E. Suhayati notes, it is the quality of formalization and practical implementation of such policies that significantly affects the likelihood of fraudulent actions, especially in areas with increased risks, in particular in procurement and financial reporting [11].

Key corporate policies and their importance for reducing fraud risks can be summarized as a list:

- Corporate governance policies define a system of roles, authorities and accountability mechanisms in the organization, which reduces the risk of concentration of power and abuse; an example is the separation of the functions of the CEO and the chairman of the board of directors as a mechanism of checks and balances [3];
- Internal control policies regulate procedures for verifying, approving, and documenting transactions, making it difficult to conceal financial irregularities; examples include regular internal audits and formalized financial reporting procedures [3; 11];
- Codes of ethics and integrity policies create a culture of honesty and non-acceptance of fraud, influencing the behavior of employees and managers; examples include establishing standards of ethical behavior and requirements for declaring conflicts of interest [6];
- Fraud risk management policies are aimed at systematically identifying, assessing, and monitoring the risks of financial abuse; examples include identifying areas of increased risk in procurement and financial transactions [11];
- Staff training and awareness policies prepare employees to recognize signs of fraud and respond appropriately to suspicious situations; examples include regular training on fraud prevention and reporting procedures [6].

Thus, corporate policies form the organizational dimension of the Clear Finance Architecture, which, together with technological solutions, ensures a systematic reduction in fraud risks and an increase in the financial integrity of the enterprise.

Building a Clear Finance Architecture with the integration of corporate policies and ERP automation to reduce fraud risks should be based on a combination of technological, organizational and managerial solutions within a single financial management logic. As shown by the study by P. Gomber, J. Koch and M. Siering, the digital transformation of finance changes the very nature of financial processes, enhancing the role of data integration, analytics and transparency of operations [7]. In this context, it is advisable to consider the Clear Finance Architecture as a holistic model in which ERP systems form the technological framework for data and process management, and corporate policies set the regulatory framework for behavior, control and accountability.

The first stage of such construction is the formation of a single information environment based on ERP. Based on the materials of Brander.ua [4], the integration of financial, production and management processes within a single platform allows to eliminate data fragmentation and create a single source of truth for management decisions. At the same time, as the Grade.app study shows, it is the end-to-end traceability of transactions, automated control procedures and the formation of a continuous audit trail that are the key mechanisms for reducing the opportunities for fraud [5]. A practical case in this context is the use of three-way matching mechanisms in procurement processes, when payment of invoices is carried out only after an automatic check of the correspondence between the order, acceptance documents and the supplier's invoice, which significantly complicates the implementation of schemes with fictitious deliveries [5].

The second important dimension is the use of advanced analytical and intellectual capabilities of ERP. As S. Shiwakoti notes, intelligent ERP systems that integrate artificial intelligence, machine learning, and predictive analytics allow for a shift from reactive to

proactive risk management by identifying anomalies and suspicious patterns in transactional data sets [10].

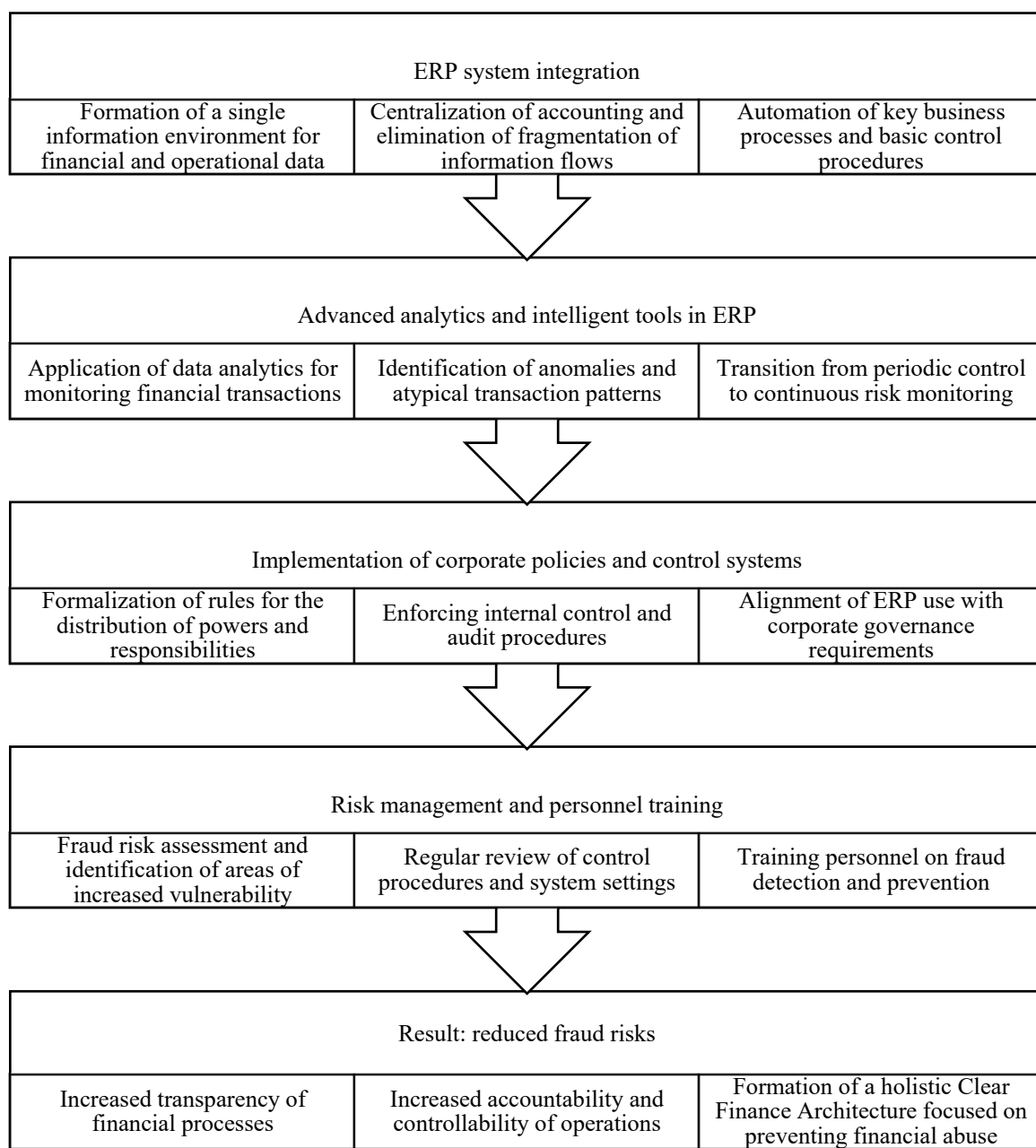


Fig. 1. Building a Clear Finance Architecture with integration of corporate policies and ERP automation

A similar approach is supported in the works of S. Grabski, S. Leech, and P. Schmidt, who emphasize the transition from periodic monitoring to continuous auditing and early detection of financial deviations [8].

In practical terms, this means using analytical dashboards and anomaly detection algorithms to monitor atypical payments, unusual cost fluctuations, or violations of established operating patterns. At the same time, technological infrastructure cannot be effective without the appropriate institutional foundation. As D. Byrne’s research shows, it is corporate policies and principles of good corporate governance that create an environment of accountability and transparency in which the space for abuse is reduced [3]. In turn, Flowerastia R., Trisnawati E. and Budiono H. emphasize the importance of the “tone from above”, the role of supervisory bodies and the combination of internal control with a culture

of integrity as a system of interconnected factors for preventing and detecting fraud [6]. A practical example of such an approach is the implementation of policies for the distribution of authority, when no employee controls all stages of a financial transaction, and the ERP system technically supports these restrictions through a role-based access model [5].

Of particular importance is the formalization of fraud risk management policies and staff training. As E. Suhayati notes, the combination of effective internal control, internal audit and the principles of good corporate governance has a statistically significant impact on reducing the likelihood of financial abuse [11].

Thus, Clear Finance Architecture is formed as an integrated system in which ERP provides transparency, traceability and automation of financial processes, and corporate policies set the rules, values and accountability mechanisms. In turn, the combination of these elements allows us to move from fragmented control measures to a holistic fraud risk management model, focused not only on detecting violations, but also on their systematic prevention.

Conclusions

The study substantiates the feasibility of considering Clear Finance Architecture as a holistic model of organizing the financial function, combining processes, data, technologies and management mechanisms into a single system. In this context, the CFA-Method proposed by Natalia Lavrik represents a practical and scalable methodological framework for implementing the principles of Clear Finance Architecture in corporate environments. By combining ERP-based automation with formalized corporate policies, analytical tools and governance mechanisms, this approach enables a transition from fragmented control practices to a holistic model of proactive fraud risk management and capital protection.

This approach allows us to move from fragmented financial management to a structured architecture focused on transparency, manageability and improving the quality of management decisions. As a result, the financial function acquires not only accounting, but also analytical and control significance in the corporate governance system. Data decentralization through the implementation of ERP allows us to significantly reduce vulnerability to fraud through: end-to-end control over operations, minimizing human intervention, forming an automated internal control system, which creates the prerequisites for personnel responsibility.

The combination of formalized rules, a culture of integrity, and a supervisory system with automated solutions creates the basis for systematically reducing fraud risks and increasing the financial integrity of an enterprise.

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