

DEVELOPMENT AND IMPLEMENTATION OF A COMPREHENSIVE FINANCIAL PROCESS AUTOMATION SYSTEM IN THE HOLDING

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Abstract

In the context of the rapid development of financial technologies, automation of financial processes is becoming a key aspect of the management of modern companies. This work is devoted to the development and implementation of an integrated financial process automation system in the holding. The main focus is on improving the efficiency of the company, reducing staff costs and strengthening control over financial flows. The study analyzes various aspects of automation, such as the use of the 1C system for initial and complex automation of financial accounting, integration with other systems and the development of unique solutions adapted to the specifics of the enterprise. The practical part of the work demonstrates the successful application of the developed solutions in a real holding company, which confirms their effectiveness and importance for optimizing financial management. The work also highlights the experience of using these solutions in various projects, emphasizing their role in improving the financial stability and competitiveness of the company.

Keywords Automation, automation of financial processes, financial processes in holdings, implementation of an integrated automation system.

INTRODUCTION

The rapid development of innovations in financial technology over the past few years has radically transformed the financial services sector, altering the ways in which both large and small enterprises manage finances, pay bills, and raise funds [1,8].

Modern companies face the continuous demand for growth and development, which encompasses not only the improvement of products and services but also the effective management of financial resources. In this context, the automation of business processes plays a key role in optimizing a company's financial management. The automation of financial processes offers numerous benefits:

1. Automation significantly reduces the time spent

on routine operations, simplifying decision-making processes and accelerating task execution.

2. The implementation of automated systems reduces the number of employees involved in financial operations, leading to lower labor costs.

3. Automated systems ensure precise control over the company's income and expenses, enabling the timely identification and prevention of financial risks [2].

This paper will explore the process of developing and implementing a comprehensive system for automating financial processes in a holding company.

1. General Characteristics and Preconditions

for Business Process Automation

Business process automation involves the use of various technologies and software solutions to improve and optimize a company's operations. It is important to highlight financial management automation as one of the key aspects of this process. Financial management automation involves the implementation of software tools to simplify and enhance the efficiency of a company's financial operations. This includes the automation of accounting and analysis of financial transactions, simplification of budget planning and forecasting processes, and strengthening control over financial flows. Modern automated financial management systems contribute to more effective control and monitoring of financial resources and business processes by providing timely access to necessary data. This enables well-founded managerial decisions to be made promptly. Moreover, such systems ensure the coherence and consistency of information, significantly reducing the labor required for data verification, and offer functionalities for the visual representation of information.

The following will examine processes automated using 1C:

Basic Automation: Initial financial accounting automation can be implemented using the 1C system. This is the initial stage, involving minimal modifications to 1C for automating standard routine processes, allowing employees to free up time for more complex tasks. The flexibility of the 1C system also allows for the resolution of complex tasks, especially with a qualified specialist who can configure the system according to the specific activities of the company. This approach enables employees to focus on intellectual and analytical tasks, while management receives timely reporting

data without distraction from ongoing work. In manufacturing businesses, for instance, the configuration of 1C can optimize the following functions:

- **Regulated Accounting:** Accounting and tax accounting for developers and general contractors, IFRS reporting, including consolidation.
- **Management Accounting:** Contract and cost management, procurement, treasury, budgeting, and management fact consolidation.
- **Operational Accounting:** Sales, rental, operation, supply, and warehouse management, contractor accounting (mechanization and transportation), construction payroll, special clothing, and equipment.

Comprehensive Automation: More complex automation projects involve integration with other accounting systems and the development of a unique financial accounting system tailored to the specific needs of the enterprise. Using such software provides organizations with significant advantages, particularly the correct scheme for consolidating and analyzing financial reports. Joint use of reporting becomes accessible to both the team of specialists and the management, with access to data being strictly delineated and controlled. The financial condition of the company can be promptly monitored for compliance with strategic and operational goals, ensuring transparency and accuracy of data. The report preparation process is expedited, allowing for instant report creation. The company's readiness for audits is improved. Financial reporting automation eliminates many labor-intensive manual accounting processes and significantly reduces the number of errors associated with human factors [3]. The preconditions for financial process automation are reflected in Table 1.

Table 1. Prerequisites for Automation of Financial Processes

Prerequisites for Automation	Description
Cash Gaps and Deviations from	Frequent cash gaps and significant deviations from planned budget indicators indicate the need to improve financial management.

Budgeting Targets	
Manual Data Collection and High Reconciliation Costs	Data for planning is collected manually, often from various systems, leading to significant costs for reconciliation and verification of consolidated data.
Untimely and Labor-Intensive Analysis	Obtaining actual data for the operational analysis of planned performance indicators takes a lot of time and effort, resulting in delays and untimely analysis.
Insufficient Information Security	The financial calculation tools in use do not ensure adequate security of management information. Loss or unauthorized access to this information can have serious business consequences.
Slow Data Approval and Validation	The approval and validation of financial accounting indicators, as well as the management of accounting and financial department data, are often done via email or verbally, which reduces the speed and accuracy of decision-making and does not allow for the tracking of changes history [4].

The following Table 2 outlines the stages of financial process automation.

Table 2. Stages of Financial Process Automation

Stage	General Description
Defining Business Automation Efficiency Indicators	At this stage, it is necessary to clearly define the goals of automation and the criteria for its successful implementation. It is important to analyze the current state of the company and determine what results will be significant for the business. The main indicators for evaluating the success of automation include financial metrics such as revenue, profit, balances, and debts. Quality indicators of automation, such as sales dynamics, expense norms, profitability, and margin, are also important. Additionally, before selecting a software product, it is crucial to determine which reports will contribute to effective business management. The decision here involves either developing internal financial competencies or delegating part of the work to a competent specialist, whether an internal employee or an outsourced expert.
Operational Financial Management	If the goal of automation is full control over cash flow and ensuring solvency, it is important to choose an IT solution that integrates with banking systems to provide real-time account information. Such a solution should plan cash flows in the short term to avoid cash gaps.
Selecting a Software Product for Automation	Identify five to seven IT solutions suitable for your company based on size, type of activity, and budget. Consultations with trusted companies and entrepreneurs can help gather feedback on various products. A thorough analysis and modeling of your processes in the chosen IT solutions are necessary to understand if they fit your business. Use trial periods to test the functionality. Once you have two or three options left, compare their costs and expected results to make a final decision [5].

2. Features of Budget Management Automation in Holdings (Groups of Companies)

Groups of companies are more complex systems compared to individual businesses or enterprises.

These complexities manifest in almost all aspects of organization. Figure 1 highlights the aspects that have the greatest impact on the implementation of this task.

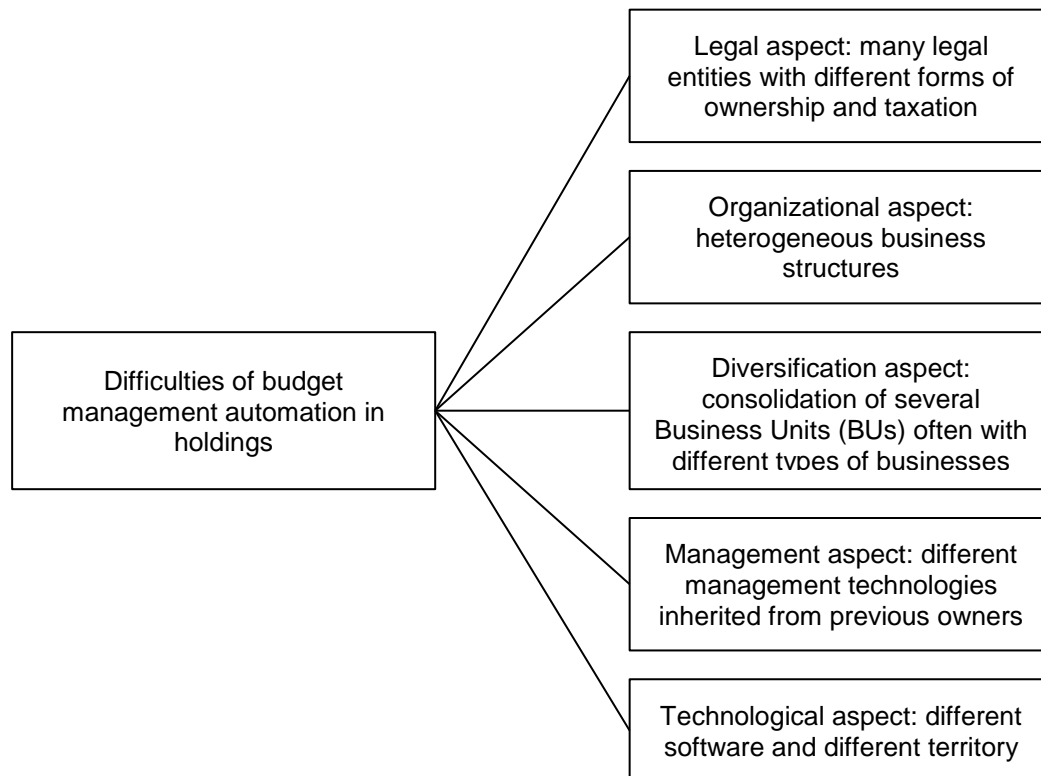


Fig. 1. The aspects that have the greatest impact on the automation of budget management in the holding [6].

Ultimately, enterprises with different types of activities differ from each other not only in organizational structure and business processes but also in the accounting and planning of business operations. These differences pertain to the types of operations, the analytical dimensions used, and the detailing and grouping of analytical classifiers.

When such enterprises form a holding, questions arise about how accounting should be conducted in individual enterprises to ensure consolidated reporting. For each type of holding, it is necessary to provide information representation that allows for comprehensive problem-solving: meeting the

needs of business units and ensuring consolidated reporting for the holding as a whole. For example, a financial holding consisting of multiple business units (BUs) requires aggregated reporting, whereas enterprises representing one large BU need detailed reporting that excludes the influence of internal interconnections.

To build a comprehensive information system, it is necessary to formalize the list of business operations that need to be accounted for in the information databases of individual business units. A specialized chart of accounts, a set of analytical dimensions for each account, and a list of operations are developed. For the holding as a

whole, a separate chart of accounts with usually more general analytical dimensions is developed. Then, the structure and composition of the analytical dimension classifiers are developed: centers of financial responsibility, cash flow items, income and expense items, etc.

After development, a connection is established between the accounts and business operations of the BUs' and the holding's charts of accounts. Transactions between companies within the group may be interpreted differently; for instance, the sale of products from one BU to another may correspond to a transfer operation at the holding level.

To organize a comprehensive information system, one of two architectures can be used. The first architecture is a unified information database standardized for accounting by all business units. Advantages of this approach include centralized storage and analysis of information. Disadvantages are related to the high costs and time required for the development or acquisition of large-scale solutions such as SAP, Microsoft Dynamics, or ORACLE EBS.

The second architecture consists of a set of specialized automation systems (e.g., based on 1C) that account for the specifics of each BU and are integrated and consolidated through integration-consolidation tools. Advantages include shorter implementation times and lower costs due to the use of common solutions with extensive implementation experience and typical solutions for various types of businesses. Disadvantages are related to the fragmentation of databases and additional requirements for the consolidation and data exchange subsystem [6].

3. Practical Example

The development and implementation of a comprehensive financial process automation system in a holding company is a complex, multi-stage process that requires meticulous planning and execution. The system was developed from 2015 to 2018 in blocks:

- Budgeting,
- Treasury,

- Document Management.

Conceptual design began with an analysis of current financial processes and identifying areas that needed automation. This stage was carried out in collaboration with Ernst & Young (EY) business analysts, involving the collection and analysis of requirements from all internal SMART-HOLDING (SH) divisions. This approach was necessary to account for the specifics of the holding's activities and its strategic goals and objectives. Detailed functional requirements were thoroughly developed, resulting in a comprehensive technical specification describing all the necessary functions and capabilities of the system. At the end of this stage, a detailed requirements document was created, outlining all essential system functions, user interfaces, and data processing logic and processes.

Following this, the system was designed and developed. The standard BAS / 1C functions were completely redesigned, and all system interfaces were developed from scratch, creating a unique product tailored to the needs of holding structures. The core principle embedded in the system's algorithms and processes was flexibility, allowing easy adaptation to changing business conditions, legislative requirements, and internal processes, ensuring long-term efficiency and stability.

The next crucial stage in the development process was comprehensive, in-depth, and end-to-end testing of all documents, forms, and processes. System logic testing is vital for identifying and eliminating errors before the system launch. This stage involves verifying the correct operation of all system modules and their interactions. Special attention is given to checking calculations, algorithms, and data for potential inconsistencies and errors.

The penultimate stage was the implementation of the system within the organization. This stage involved:

- Coordinating the system launch, collecting feedback, and adjusting the system based on real-world conditions.
- Leading the system implementation, integrating it into the SMART-HOLDING work environment.

- Ensuring a transition to the new system, including process configuration and user training.

The final stage of the system implementation was the support and maintenance of organizations that have integrated this platform into their business processes. Thus, the "Treasury" system was developed based on BAS / 1C for one of Ukraine's largest investment holdings, SMART-HOLDING (SH), which operates in various industries, including metallurgy, agribusiness, shipbuilding, development, and energy. The system provided a full cycle of financial planning for the budget year, controlling budget execution in operational, financial, and investment activities. It monitored all group company transactions within established budget limits.

A unique interface was created for treasurers,

allowing them to control payment requests, create and approve current payment runs, adjust payment plans, and record treasury operations. This integration with various client-bank systems enabled payment execution and data upload. Heads of financial responsibility centers (FRCs) received an interface for managing limits, reserves, and requests, with access to actual and forecast data, and tools for working with internal system documents. The tool offered flexible liquidity management, displaying actual and forecast data in various dimensions, including payment centers and currencies, with detailed budget and project analytics. The construction of this tool was based on the principles of interaction between FRC employees and the Financial Controlling (DFC) and Treasury (DTO) departments, as shown in Figure 2.

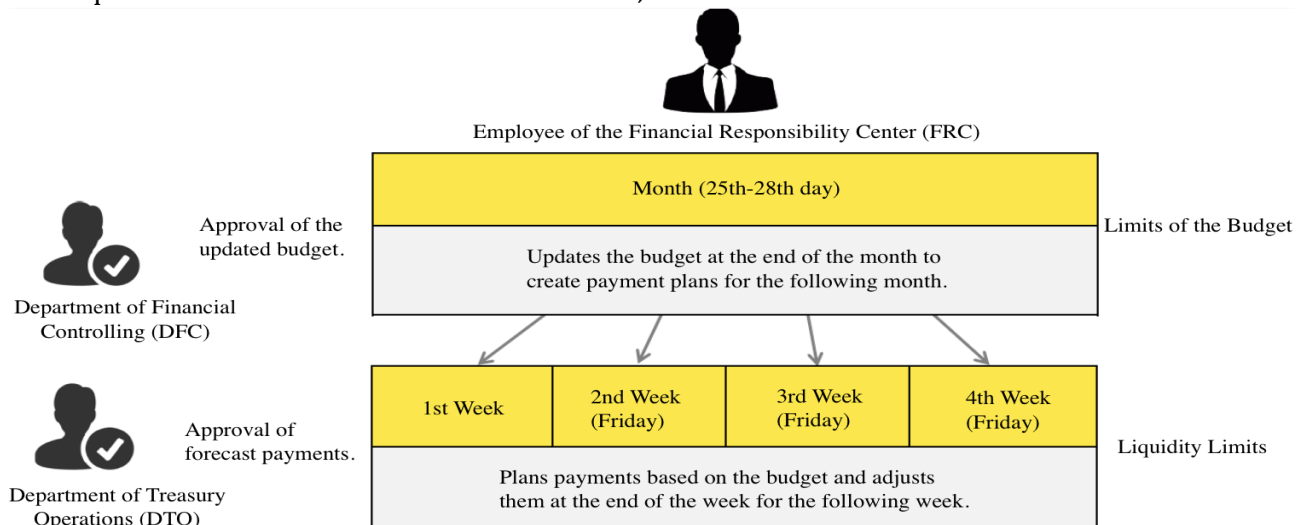


Fig. 2. Principles of Interaction of the Financial Responsibility Center (FRC) Employee with the Departments of Financial Controlling and Treasury

The system supported multi-currency functionality and provided flexible currency options in reports and forms. Approval routes were developed for internal documents, budgets, the consolidated financial plan, reserves, and payment requests. The mechanism for managing and reallocating budget limits ensured efficient resource utilization. Control of overbudget operations was carried out through separate approval routes, ensuring transparency and strict control of such operations.

The system also relied on versioning and supported scenario planning. Implementing version control allows tracking every change made to the system, ensuring transparency and enabling the analysis of modifications' impact on the system's overall performance. Moreover, the ability to revert to previous stable system versions in case of critical errors minimizes failure risks and ensures the continuity of business processes. Scenario planning is an integral part of designing

and implementing financial process automation systems, allowing the modeling of various development scenarios and adapting the system to different conditions.

Regarding Master Data Management (MDM), it was designed to build unified corporate-level reference information systems in companies with a branched structure or heterogeneous information landscape. It involved preparing directories and classifiers, initial content processing, maintaining reference information, keeping centralized directories up-to-date, and synchronizing reference information object records across the enterprise's information systems. Implementing MDM achieved standardization of informational interactions between structural units and functional departments, which, in turn, improved the efficiency of management decisions and the operational control of key production and economic indicators.

Post-implementation, the system was continuously refined and enhanced to meet changing business requirements. The budgeting functionality was completely redesigned, and new data processing algorithms were implemented, allowing for the consolidation and visualization of actual and forecast data into a unified financial plan before decision-making on its approval. Special attention was given to redesigning the mechanism and tools for monthly budget updates, significantly improving the quality of budget forecasts, increasing budget discipline, and allowing for timely adjustments. Consequently, the system enabled real-time budget management rather than merely working with an annual plan, greatly enhancing the flexibility and adaptability of financial management.

Following successful implementation, the system was adapted for the IF SMART group of companies. The innovative solutions developed within the system were created in partnership with Ernst & Young, received high praise within the professional community, and were utilized by Ernst & Young in other projects, expanding their application and impact. These approaches made a significant contribution to the industry, setting new standards for financial process management. Clients of Ernst

& Young who adopted these solutions improved their financial performance, reduced risks, and strengthened their market positions, demonstrating how innovations in financial management can bring long-term benefits to businesses [1].

CONCLUSION

In conclusion, the development and implementation of a comprehensive financial process automation system in the holding have shown significant improvements in managing financial resources and enhancing overall company efficiency. Automation has allowed for a substantial reduction in the time spent on routine operations, lowered personnel costs, and strengthened control over financial flows. The practical application of the system in an actual holding confirmed its effectiveness, ensuring the transparency and accuracy of financial data and the timeliness of managerial decisions. Furthermore, integration with existing accounting systems and the use of advanced automation technologies have contributed to improved financial discipline and risk reduction. The implementation of these solutions not only enhanced the internal organization of the holding but also improved its market position, providing competitive advantages. This experience underscores the importance and necessity of automating financial processes for modern companies striving for sustainable development and growth.

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