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DESIGN AND IMPLEMENTATION OF AN AUTOMATED BUDGETING SYSTEM AT A MINING ENTERPRISE: THE CASE OF RG GOLD LLP

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ABSTRACT

This article is aimed to investigate the process of designing and implementing an automated budgeting system at a mining enterprise in order to provide an overview of methods, tools and stages of implementation, as well as an analysis of the advantages and practical examples of using this system.

The purpose of the research is to identify the features of the budget process and develop recommendations for the successful implementation of an automated budgeting system to improve financial management and increase the efficiency of a mining enterprise.

Methodology. The following scientific methods were used in the study: comparative analysis; synthesis; methods of systematization and generalization, in-depth interview, SWOT analysis.

Originality / value of the research. The value of this study consists in identifying the key problems of budgeting of industrial enterprises of the Republic of Kazakhstan, developing a methodology for designing and implementing an automated budgeting system for the gold mining company RG Gold LLP. The introduction of an automated budgeting system at the enterprise has made it possible to reduce the time spent on consolidating data when forming budget applications, reduce the risk of the human factor, increase the time for forecasting and modeling the budget for making management decisions and increasing competitiveness in the market.

Findings. Based on diagnostics, SWOT analysis of the current budgeting system in the financial management system of RG Gold LLP and an expert survey to identify its limitations, user needs for the automation process were determined.

A model product for automation of the budgeting system with functional testing of the budget campaign of RG Gold»LLP for 2024 has been designed.

The automated budgeting system of Anaplan RG Gold LLP has been configured and training programs for its users have been developed.

The potential impact of the Anaplan budgeting automation system on accelerating the process of making strategic financial and managerial decisions and increasing labor productivity by saving time, labor and financial resources in RG Gold LLP were estimated.

Keywords: budgeting, financial planning, automated budgeting system, mining industry, gold mining company.

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INTRODUCTION

The mining sector of the Republic of Kazakhstan is considered as its economic base. Gold mining in Kazakhstan has determined its position in the world ranking of producers on the 11th place globally.

The contribution of the mining industry to the formation of the country's gross domestic product (GDP) in 2021 amounted to 17 %. The export share of products in the total volume of exports of mining industry products was at the level of 16 %. The industry provides employment for about 273,000 people at 230 mining and metallurgical enterprises [1].

The competitive development of domestic mining enterprises was favored by government support for the industry. The Program for the development of the mining and metallurgical industry in the Republic of Kazakhstan for 2010-2014 was implemented [2].

Legislative and regulatory documents have been adopted, the Code On Subsoil and Subsoil Use (2018), Ecological Code of the Republic of Kazakhstan (2021), the Tax Code (2019), The State Program of Industrial and Innovative Development (2020-2025), The State program «Digital Kazakhstan», the roadmap of industrialization, which together are aimed to diversify the industry in accordance with the modern requirements of the world community.

However, in Kazakhstan, despite the state's focus on digital sector reform, serious problems remain in the industry. In the context of increasing global dependencies, risks and threats to the mining industry of Kazakhstan are increasing.

First of all, there is a depletion of mineral reserves and the lack of investment in exploration.

Secondly, the ability of domestic enterprises to compete in the global market is limited by old technologies that do not correspond to the management approach. Thus, in comparison with foreign companies, the main problems of Kazakhstani mining enterprises remain low operational management efficiency and technological backwardness.

In conditions of constant threats and challenges, the issues of effective enterprise management through the rational use of resources are particularly acute. The adoption of professionally competent management decisions based on innovative technologies and advanced digital achievements contribute to financial and sustainable development, increasing the competitiveness and value of mining enterprises.

Global ubiquitous digitalization, affecting the industrial sphere, literally puts mining sector enterprises in front of the fact of an unambiguous transformation towards digitization of human resource management, budgeting, procurement, transportation, warehousing, logistics and all other business processes of mining enterprises in Kazakhstan.

The specifics of gold mining enterprises, which we noted in the form of the need to search for and constantly invest in intelligence processes, technological innovations, and environmental protection measures, actualizes the problem of simplifying and automating budget processes, implementing information systems and digital aggregators for managing, accounting, planning, and controlling financial resources.

Automation of the budget cycle of gold mining enterprises is an urgent need to improve the efficiency of financial management in the context of digital transformations of the industry.

Thus, automation of budgeting will give gold mining enterprises a flexible management and analytics tool for making strategic financial and managerial decisions to scale and increase business value in uncertain conditions.

The scientific community has conducted quite in-depth studies of the theoretical and methodological foundations of the concept of budgeting, which in its most general form means planning income and expenses both at the state level and at the level of business and households [3; 4; 5].

Budgeting serves as a fundamental instrument in managing a company's finances, enabling not just the management and planning of income and expenses, but also in setting the organization's objectives, strategies, and priorities. By adopting the common budget control, it allows to integrate various elements of an organization's operations into a cohesive plan. This plan is comprehensive, serving multiple purposes, including the planning of efficiency and the comparison of actual outcomes against the planned objectives [6].

The great majority of earlier research in the field of management accounting assumed that budgets play a diagnostic role. Budgets are traditionally used to assess effectiveness and allocate responsibility for outcomes to distinct functions within an organization [7].

According to Govindarajan, «the operational budget typically spans one year and contains information about the income and projected expenses for that period». Budgeting is characterized by several aspects, such as management's allegiance to overall aims, scrutiny and approval by a senior authority, the obligatory and limited essence of the process, along with regular analysis of discrepancies from the budget [8].

Malmi et al. [9] argue that budgeting is one of the primary responsibilities of the company's accountants. Traditional budgets are typically adhere to yearly cycles and embody the translation of strategic plans into financial terms [9]. However recent advancements in budgeting have expanded these budgetary principles. Rolling budgets or forecasts, which companies update monthly or quarterly, represent a shift towards more dynamic and adaptable budgeting methods, differing from the static nature of traditional planning [10]. These rolling forecasts, covering a future period of 12 to 18 months, are continually updated, adding a new month or quarter as each passes, offering benefits like ongoing planning, simplified content, ease of update, forward-thinking, and prompt adaptability in response to changing circumstances [10].

It is important to note that despite the existing developments in the field of conceptual provisions in the field of budgeting, issues related to the study of budgeting as a method of financial planning and enterprise management remain controversial in the scientific world [11]. In this article [11], the authors note that there are various approaches in budgeting processes.

Budget automation issues have mainly been highlighted in recent years due to the growing attention to the possibilities of using modern technologies such as machine and artificial intelligence, data analytics for budget automation. For example, a group of scientists I. M. Hegazy, A.K. Abdelhamid, A.M. Said and others in the article «How to Achieve Operational Excellence through Digital Transformation» [12] write that innovations and digital technologies will contribute to operational excellence in the oil and gas industry.

Thus, a number of researchers have made attempts to study the processes of automating the budget process. The studies of S.N. Nikulina, A.A. Butyugina and E.E. Gorbunova reflects aspects of automation of budgeting in organizations of the agro-industrial complex [13]. Willcocks L., Lacity M. and Craig A. [14] explore the implementation of robotic process automation (RPA) in human resource management (HR) and global business services (GBS).

K. Zavrazhnyi [15] also examines the facets of implementing digital communication processes in Ukrainian business enterprises. Sidorova I.A. highlighted the features of the Ventra Portal cloud software implementation for an outsourcing company [16].

It is worth noting that KPMG, Oracle, EY, IBM and others have expertise in infrastructure solutions using the best IT achievements, cloud technologies in business process automation processes.

In general, general trends in the literature indicate the active use of information technology, the development of software solutions and data analysis methods to automate enterprise budgeting processes in order to improve financial management efficiency. The study showed that despite the available theoretical and methodological developments on the budgetary process, stages of budgeting at enterprises in general, the conceptual methodological foundations of automation of budgeting processes at enterprises, as well as methodological aspects of evaluating the effectiveness of automation of financial resource management of enterprises have not yet been fully disclosed by the scientific community.

In this study, by budgeting, we will understand the method of financial planning of income and expenses of an enterprise's funds, in order to improve the effectiveness of its economic activities.

From a process-focused standpoint, we consider the budgeting procedure as actions for the preparation, review, approval and execution of the budget.

The management team of most mining enterprises, as the business develops, one way or another, will face the vital task of automating the budgeting system, since in the dynamic environment of enterprises there are constant challenges to improve management, strategic management, and innovative transformation.

The solution to automate the budgeting system will reveal numerous issues to the company's team and the financial service. The range of these issues will include how to structure the internal information space, which procedures for regulating the budgeting process need to be improved, and others. An important aspect will be issues related to the methodological aspects of the budget process, the concept of budgeting automation, which software solutions are adequately suitable for business, and the definition of stages of budgeting automation. These issues are of great importance today for enterprises that are focused on sustainable economic growth.

The study of the process of developing and implementing an automated budgeting system for industrial enterprises of the mining sector of the Republic of Kazakhstan was conducted by a team of authors of Narxoz

University within the framework of the scientific project «Development of an automation system for budgeting of the mining enterprise RG Gold LLP».

MAIN BODY

The design of a study on the advancement, design and implementation of an automated budgeting system (ABS) of an industrial enterprise of RG Gold LLP is shown in Figure 1.

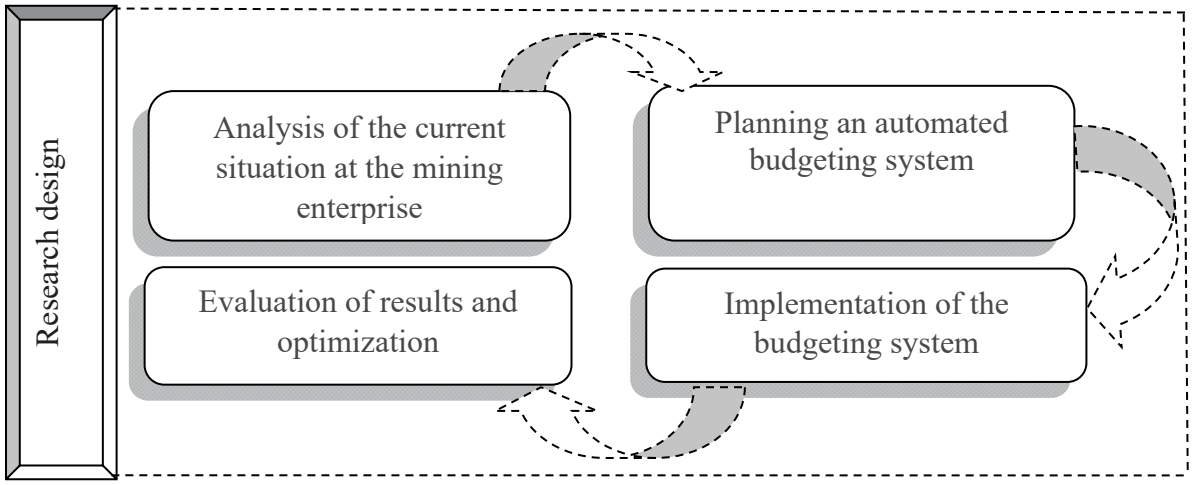

Figure 1 – Research design of an ABS
Note – developed by the authors

The development of this design study made it possible to outline the range of tasks necessary to achieve the project goal and identify methods to achieve it, according to Figure 2.

Thus, the main goal of the project was to design and implement an automated budgeting system for the gold mining company RG Gold LLP based on an assessment of the current budgeting system in the financial management system of the enterprise.

The study of approaches to automation of budgeting in the company's financial management system involves analyzing the available product solutions on the market. To date, the following planning and budgeting modules are presented, which are part of many ERP systems, such as SAP, Oracle, Parus, 1C, Galaktika, Microsoft, BAAN, which are more often implemented in mining and metallurgical companies. When implementing such systems, it is necessary to purchase licenses for all modules being implemented, the cost of which will depend on the number of users.

To consider this type of solution in more detail, the following example of the functional module of the SAP ERP PaB (Planning and Budgeting) can be used. Corporate systems of this class are engaged in enterprise resource planning and are designed to automate many processes, including accounting and management. The PaB functional module is designed specifically for information support of planning and budgeting processes in large companies. With its help, it is possible to collect data on accounting transactions, financial transactions, to create a budget, to make adjustments, to coordinate and build reports. As a result of the implementation of such an IT solution, the amount of manual work is reduced by up to 50 % and the creation of financial reports is accelerated by 40 % [17]. Business intelligence solutions offer new opportunities for automatic data collection and use that support data-driven decision-making. These technological advancements can exceed human efficiency levels and assist businesses in enhancing their decision-making capabilities. Furthermore, earlier research indicates that effectively integrating innovations in information technology (IT) broadly enables companies to realize substantial gains in terms of time efficiency and convenience [18].

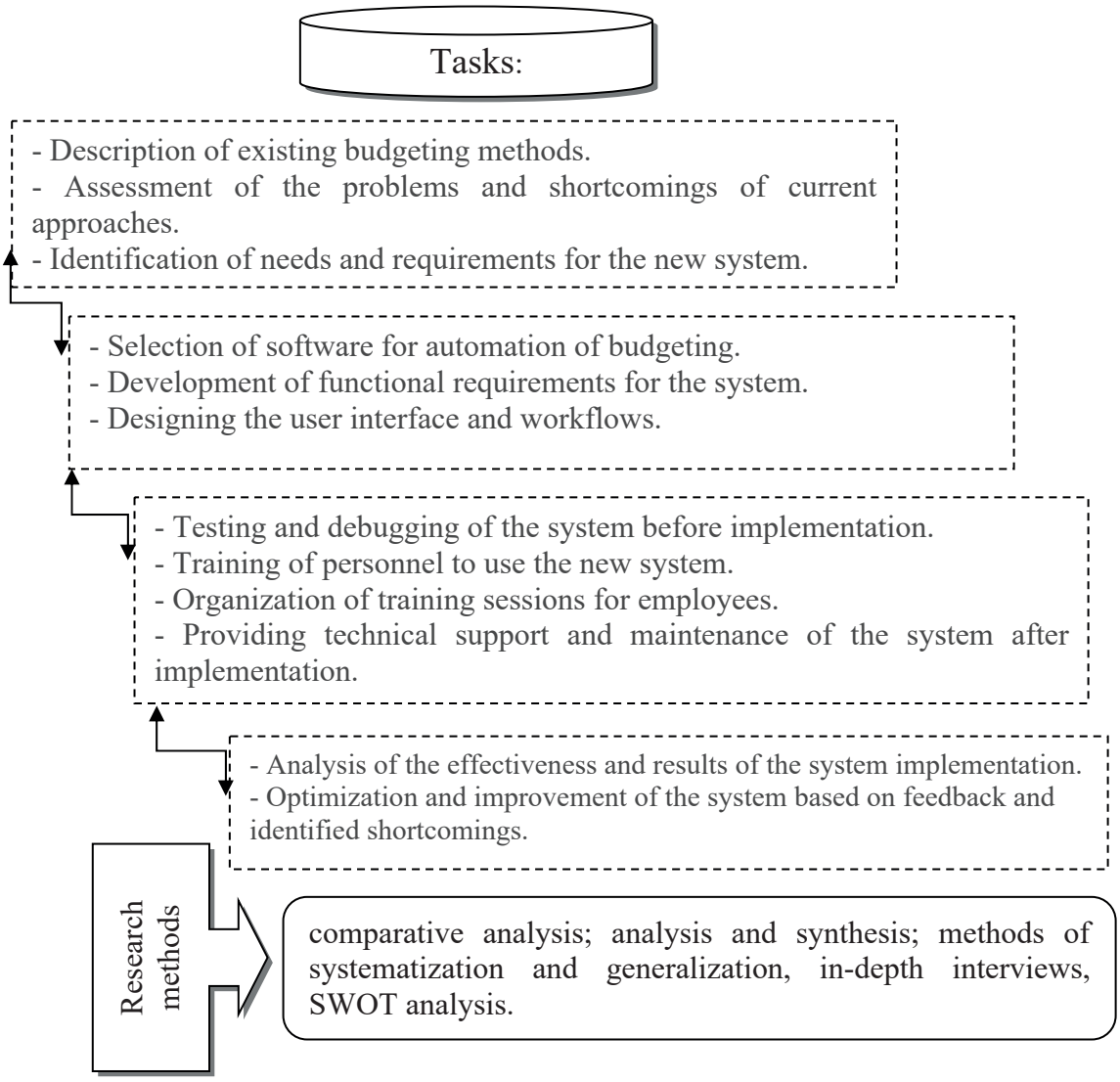

Figure 2 – Tasks and research methods for the development of ABS
Note – developed by the authors.

In recent years, the Robotic Process Automation (RPA) solution has increasingly proven itself [19] for the implementation of automated processes. An RPA can be defined as «a pre-configured instance of software that applies business rules and a combination of actions to independently implement processes, actions, transactions and tasks in one or more unrelated software systems, which is oriented to achieve a result or provide a service, while management is exclusively carried out by a person». RPA refers to the automation of structured scenarios in businesses, either partially or wholly, using software that executes repetitive, rule-based tasks across various functions and applications. Examples of such predefined processes in accounting include tasks like payment processing, account opening, handling invoices, or generating corporate reports [20], these tasks are best suited for standardized processes that are not complex. It is estimated that up to 70 % of routine administrative tasks could be executed through such rule-based and robotic-controlled processes [21]. Prior to adopting an RPA solution, assessing the potential for automation is crucial [22], because establishing a robot involves considerable effort in process modeling, analysis, programming, and testing. In academic and professional literature, the appraisal of these projects typically focuses on process-centric factors like the volume and frequency of the processes, their level of structuring and standardization, and the availability of required data. [23].

Magnitogorsk Iron and Steel Works (MSW) is one of the world's leading steel producers and is a key one in the Russian ferrous metallurgy. The company has created a special unit that is responsible for introducing innovations and improving business efficiency through robotic automation of RPA processes. MSW has robotized a variety of processes, including accounting, logistics, procurement, and HR. Robotization of the scrap metal supply payment process, which includes several divisions, has become one of the most complex and complex projects for the MSW. The scrap metal market is characterized by many suppliers and manufacturers who work on prepayment. Unfortunately, the share of unscrupulous and financially unreliable market participants is high. The development of the robot made it possible to automate key business processes, including making payments, accounting for supplies, accounting, and database maintenance.

The robot carried out most of the work in internal ERP accounting systems based on Oracle, BI, bank clients, etc. In this regard, the company faced the task of integrating the robot into the corporate ERP system and creating individual interaction scenarios for a variety of roles in the corporate system. All information is collected from the RPA system to an Oracle-based web portal, where the data is presented in an accessible form. All robots are centrally controlled here. Employees with the appropriate access give commands to robots and upload the necessary reports. It should also be noted that when implementing RPA solutions, information security became another challenge for MMK [24].

Researchers have pointed out that during 2019-2020, "digital efficiency" emerged as the second-highest risk for the mining industry. For transformation to be both effective and valuable, it's essential that it be undertaken as a collaborative effort across the entire organization, underpinned by a unified business vision and robust commitment from top management. Implementing digital technologies entails a transformative process that extends beyond mere technological change, requiring both organization-wide coordination and an understanding of its impact at the organizational level. As the result of automation of processes and the adoption of new technologies and methods, organizational frameworks will undergo significant transformations. A recent study indicated that technological advancements could potentially alter about 80 % of the existing workforce skills in Chile's mining sector over the medium to long term. Furthermore, there's a significant likelihood, at least 40 %, that these competencies might be supplanted by automated systems. This scenario necessitates a thorough evaluation and proactive planning for new organizational structures. Preparing employees for these emerging technologies is crucial, necessitating the development of new knowledge and skills. Hence, companies should prioritize investing in relevant training programs for digital technology [25].

So, the study of available information systems and automation technologies in the IT solutions market allowed us to identify the advantages of ABS, as well as identify the optimal criteria and requirements for the introductory software product, in accordance with Figure 3.

Based on the above information analysis, the following main advantages of implementing an automated budgeting system can be identified:

- automatic data collection;
- new solutions for business intelligence;
- reducing the amount of manual work;
- accelerate the creation of financial reports;
- centralized data management;
- improving the accuracy of budget calculations.

Therefore, we have formed the following criteria for selecting a digital solution for automating the budgeting system:

- integration with existing IT-programs;
- efficient and automated data management;
- minimized use of MS Excel;
- optimized creation of financial reports;
- practical and advanced business analytics:
- functionality, performance and security.

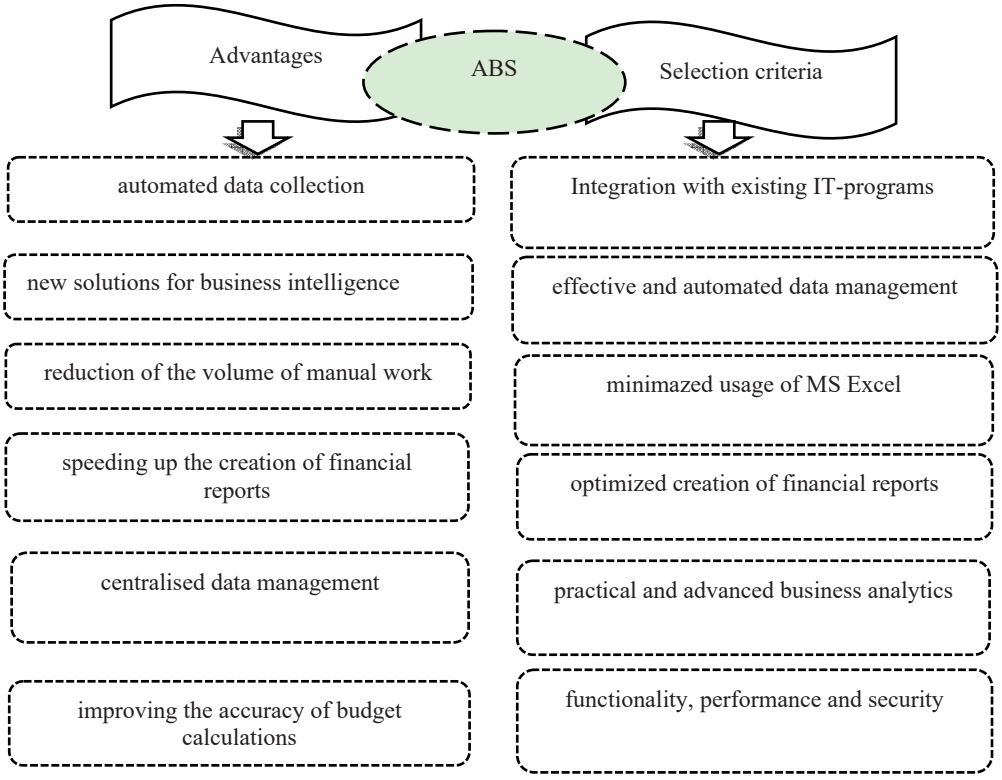

Figure 3 – Advantages and criteria for the implementation of ABS
Note – developed by the authors

The assessment of the organization of financial management and budgeting system of RG Gold LLP made it possible to identify the specifics of the company's activities and identify the needs and requirements for a new automation system from the financial and analytical service (FAS) and the company's management.

The analysis of the current system of formation and procedure for approving the budget of RG Gold LLP made it possible to identify strengths and weaknesses, as well as identify opportunities and threats of the current architecture of the budget model of the enterprise. Due to the confidential data, we are limited in reporting the final results of the SWOT analysis of the current budgeting system of the RG Gold LLP. Figure 4 shows the advantages and disadvantages of the budget model of the enterprise that we have systematized.

Our advantages include the fact that the budgeting procedure is phased and provides a guideline for business development in the future. Regarding the main drawback, in our opinion, it is an insufficient degree of automation of the budget process at the enterprise.

For practical implementation of the project on automation of the budgeting system, a competitive map was developed for RG Gold LLP to select the optimal offer among 3 development companies: KORUS Consulting LLP, Cybernetics.com LLP with software Opti Macro, FOREVALUE LLP with software Anaplan.

The analysis of market offers showed that FOREVALUE LLP has competitive advantages in terms of reliability assessment criteria, positive customer experience and the duration of the company's operation in the market, as well as the presence of strengths.

Anaplan is a cloud-based planning and modeling platform that allows RG Gold LLP to create a budget process model based on operational data, combine data, people and plans in real time, thereby helping management make more effective decisions, according to Figure 5.

To identify the limitations of the current budgeting system of RG Gold LLP and the needs of users for its automation, we conducted an in-depth interview in June 2023.

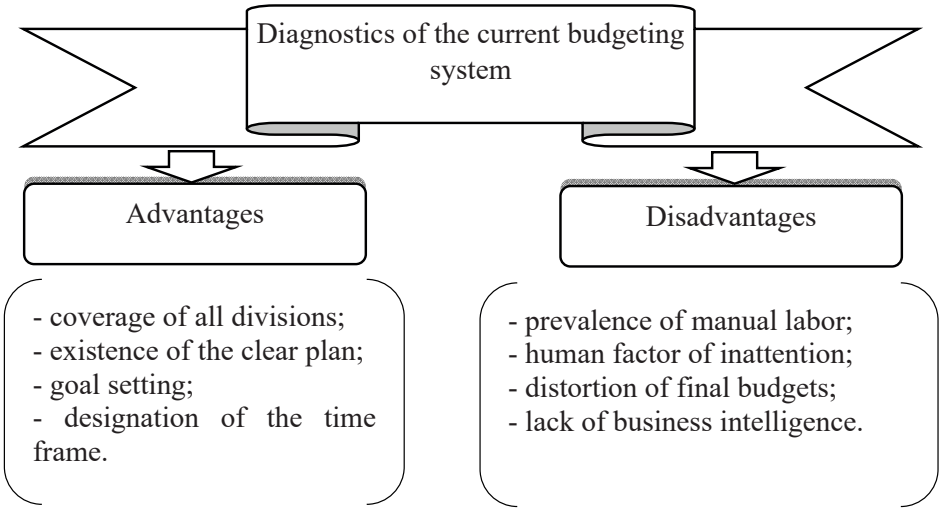

Figure 4 – Diagnostic results of the current budgeting system of RG Gold LLP
Note – compiled by the authors

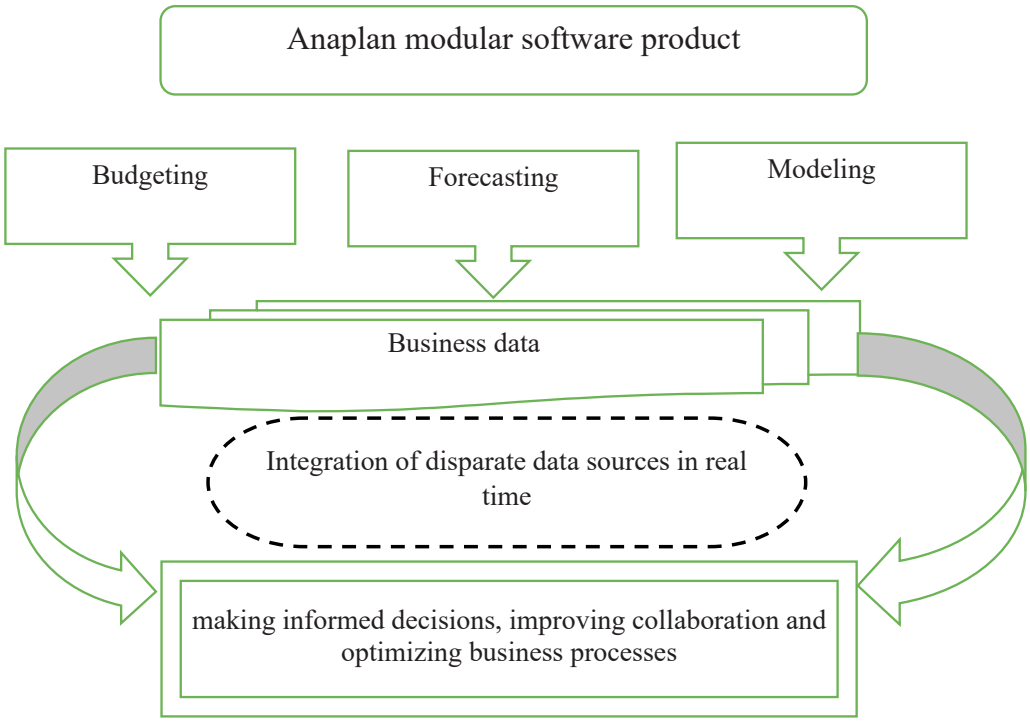

Figure 5 – Features of the Anaplan model software product
Note – developed by the authors according to the source [26]

The purpose of the in-depth interview was to identify users' expectations from the new automated budgeting system of RG Gold LLP and develop recommendations for its development, considering the existing main problems and limitations of the current budgeting system. The object of the study was TOP management, FAS employees and representatives of the structural divisions of RG Gold LLP involved in the formation of the company's budget.

The subject of the study is the needs and preferences of users regarding the new automated budgeting system.

Research objectives:

- to identify the main shortcomings of the current budgeting system in RG Gold LLP through an in-depth interview;
- determine users' expectations from the automated financial budgeting model;
- identify the possibilities of integrating the current budgeting system into an automated one and training employees to work in it.

During the in-depth interview, the complex and time-consuming processes of the company's budget process were revealed. For example, filling out forms with needs and consolidating data required manual labor and time.

The process of developing a model software product for the implementation of budgeting processes of RG Gold LLP assumed a breakdown of work into several phases, table 1.

Table 1 – Stages of design and development of Anaplan ACS by RG Gold LLP

Design phases	Types of work
Phase I – Budgeting	- design of automation of budget application formation (integration of 1C KUFIB systems with Anaplan)
Phase II – Financial statements	- works related to revenue modeling (production plan, volume of finished products and revenue; GOGS, taking into account the production and technological specifics of mining enterprises, taxes, CAPEX, etc.)
Phase III – Consolidation -	- design of a single aggregating form for the consolidation of all budget applications for the analysis and formation of the enterprise budge.
Note – compiled by the authors based on the results of the study	

Thus, the complete process of designing and developing a model software product for the implementation of budgeting processes of RG Gold LLP is quite time-consuming and step-by-step.

It should be noted that the process of operational implementation and testing of the new ABS in RG Gold LLP took place during the budget campaign for 2024-2025. The testing process was accompanied by training of FAS employees to work in the Anaplan system. So, the testing process included successive stages:

Stage I - Collection and accounting of requirements. Before testing, it is extremely important to understand the specific budgetary requirements of the gold mining industry. This includes understanding the types of data that need to be managed, the financial and operational metrics that are critical, as well as the unique challenges and regulatory constraints faced by the industry.

Stage II - Testing planning. Here, first of all, it is necessary to determine the necessary and sufficient amount of data for testing, which should cover all the functionality of Anaplan developed during the automation project. It is necessary to check the correctness and completeness of the uploaded and entered data, which will determine the test set.

Stage III - Testing of data integration. When importing test data, you need to make sure that the data can be imported from various sources, such as production, financial, and operational data.

Stage IV - Testing of modeling and budgeting. Creating a test budget model. To do this, users need to be able to create working budget models that consider factors such as production costs, commodity prices, labor and equipment.

Stage V is User interface testing. At this stage, the user interface is being tested, that is, the convenience of working with the system for the end user. It is necessary to make sure that the user interface is intuitive and convenient for budgeting specialists for companies in the gold mining industry.

Stage VI is Performance testing. It is important to test the performance of Anaplan under various workloads, making sure that it can handle the amount of data and user activity expected in a gold mining company. In this project, this stage was carried out in real time, and additional time, at least 2-3 budget cycles, will be required to fully assess the performance of the implemented ABS.

Stage VII - Safety and compliance testing. The implementation of the Anaplan software system involves the processing of confidential financial and business data. It should be noted that the Anaplan cloud platform has the highest standards of data protection, confirmed by international certificates.

Stage VIII - User Acceptance Testing (User Acceptance Testing UAT). This stage allowed us to check how Anaplan meets the specific requirements and workflows of end users. In the current case, UAT has been integrated along with the design, configuration, and implementation process.

To teach the use of the Anaplan system, RG Gold LLP held a training session in two stages:

- in the first phase of the project, general training for all participants in budgeting;
- in the second phase of the project, training is provided for the newly created competence center of RG Gold LLP and the production department.

In general, the training of end users was aimed at adapting users to the new Anaplan system.

A logical part of the introduction of a new ABS for enterprises in the extractive industry should be an assessment of the effectiveness of the introduction of technological innovations. Considering that RG Gold LLP is still at the stage of implementing automation of the budgeting system, it is premature to identify the overall economic effect. However, to assess the initial changes in work processes after the introduction of the Anaplan system, we conducted a qualitative study - an in-depth interview with FAS employees. The purpose of the in-depth interview was to study budgeting processes after the introduction of automation in RG Gold LLP.

Let's outline the main results of the implementation of the Anaplan system in terms of the efficiency of the budget process for the company:

Firstly, the risk of the human factor in the budget process has been reduced. Thus, there was a decrease in manual work in MS Excel after the introduction of automation. Most of the processes are now carried out in the Anaplan system, in which several people/departments can work at once.

Secondly, the Anaplan system has verification tools that check errors during filling, prevent technical errors, that is, the system has minimized the risks of the technical plan.

Thirdly, the next important advantage of the system is data analytics, since before the implementation, employees of the FAS department spent a lot of time verifying and correctly filling in data. Moreover, FAS employees can create special analytical information panels for top management, which reflect the main financial indicators. Another characteristic of the Anaplan system is the advanced data granularity.

In general, the development and implementation of Anaplan made it possible to automate the budgeting process of RG Gold LLP. The results were the automation of the collection of information on budget applications, which was previously the most labor-intensive process in the company. In addition, the process of collecting financial statements, such as profit and loss statements, cash flow statements, and unit cost reports, has been automated.

CONCLUSION

The budget process has difficulties in the mining sector. Thus, the methodological foundations of the budgeting automation system are determined by the specifics of the industry and the activities of gold mining enterprises. Therefore, when designing and developing an ABS, it is necessary to carefully develop approaches to cost formation and rationing, planning a production plan and various budgets (P&L, Cash flow, etc.).

A review of the software development market and digital budgeting aggregators showed that today there is a huge selection of product solutions for automating the financial management unit and budgeting of industrial enterprises. The competitive analysis of the ABS developers allowed us to determine the appropriate software product for RG Gold LLP. Thus, the introduction of an ABS based on Anaplan software at the enterprise will result to an enhance in the quality of the budget process, improve the accuracy of forecasts and make informed financial decisions, as well as optimize time and resources, which will contribute to the effective financial manageability of the enterprise.

Diagnostic procedures were carried out to identify the limitations and barriers of the current budgeting system in the financial management system of RG Gold LLP using SWOT analysis and in-depth interview with experts, which made it possible to clearly identify the needs of users for budget automation and requirements for the future budget model. We consider this stage in the design and implementation of ABS for industrial

enterprises in Kazakhstan to be very important, since it allows us to determine the exact requirements, criteria, and parameters of the future system for a particular enterprise.

The process of designing, developing and implementing ABS takes place in stages. In our case, first, the design of an effective automated budgeting model of the mining enterprise RG Gold LLP with requirements for functionality, performance and safety is defined.

Methodological developments for setting up functionals, classifiers, reference books and regulations for the normalization of cost item metrics are designed. The function of adaptation to changing needs and the possibility of entering additional analytical indicators with the introduction of calculation formulas by the competence center (FAS specialists) has been considered.

A model product for automating the budgeting system in the Anaplan cloud platform was designed, and functional testing of the Budgeting subsystem of RG Gold LLP was carried out in the real Budget 2024 case.

The possible risks of introducing the Anaplan system into the financial management process of RG Gold LLP have been worked out. At the implementation stage, user acceptance testing and double verification testing were conducted, which confirmed that the system is adapted to user needs, functions as intended and meets business goals.

The automated budgeting system of Anaplan RG Gold LLP has been configured and training programs for its users have been developed.

It is recommended to create a competence center based on the Financial and Analytical Service (FAS) RG Gold LLP to maintain and develop the knowledge and skills of employees on the use of the Anaplan cloud platform. Two programs have been developed to master the knowledge and skills of users and the competence center for working in the new system.

An assessment of the initial changes in work processes after the introduction of the Anaplan system was carried out through an expert survey with FAS employees. Automation of the budgeting system ensured the speed of all operations, accuracy, transparency of data, made integrated business planning possible, ensuring its flexibility, rapid adaptation to changing conditions, led to a high level of staff communications, its focus on analysis and business decision-making procedures, thereby improving the quality of management, employee satisfaction with work results.

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ТАУ-КЕН ӨНДІРУ КӘСІПОРНЫНДА АВТОМАТТАНДЫРЫЛҒАН БЮДЖЕТТЕУ ЖҮЙЕСІН ЖОБАЛАУ ЖӘНЕ ЕНГІЗУ: «RG GOLD» ЖШС КЕЙСІ

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АҢДАТПА

Бұл мақала енгізу әдістері, құралдары мен кезеңдеріне шолу жасау, сондай-ақ осы жүйені пайдаланудың артықшылықтары мен практикалық мысалдарын талдау мақсатында тау-кен кәсіпорнында автоматтандырылған бюджеттеу жүйесін жобалау және енгізу процесін зерттеуге бағытталған.

Зерттеудің мақсаты бюджеттік процестің ерекшеліктерін анықтау және қаржылық басқаруды жақсарту және тау-кен кәсіпорнының тиімділігін арттыру үшін автоматтандырылған бюджеттік жүйені сәтті іске асыру бойынша ұсыныстар әзірлеу болып табылады.

Әдіснамасы. Жұмыста келесі ғылыми әдістер қолданылды: салыстырмалы талдау; синтез; жүйелеу және жалпылау әдістері, терең сұхбат, SWOT-талдау.

Зерттеудің бірегейлігі / құндылығы. Бұл зерттеудің құндылығы Қазақстан Республикасының өнеркәсіптік кәсіпорындарын бюджеттеудің негізгі проблемаларын анықтаудан, «RG Gold» ЖШС алтын өндіруші компанияның автоматтандырылған бюджеттеу жүйесін жобалау және енгізу әдіснамасын әзірлеуден тұрады. Кәсіпорында автоматтандырылған бюджеттеу жүйесін енгізу бюджеттік өтінімдерді қалыптастыру кезінде деректерді шоғырландыруға жұмсалатын уақытты қысқартуға, адами фактор тәуекелін азайтуға, басқарушылық шешімдер қабылдау және нарықта бәсекеге қабілеттілікті арттыру үшін бюджетті болжау мен модельдеуге уақытты ұлғайтуға мүмкіндік берді.

Зерттеу нәтижелері. «RG Gold» ЖШС қаржылық басқару жүйесіндегі қолданыстағы бюджеттеу жүйесін диагностикалау, SWOT-талдау және оның шектеулерін анықтау бойынша сараптамалық сауалнама негізінде пайдаланушылардың оны автоматтандыру процесіне қажеттіліктері айқындалды.

2024 жылға арналған «RG Gold» ЖШС бюджеттік науқанының функционалдық тестілеуімен бюджеттеу жүйесін автоматтандыру бойынша модельдік өнім әзірленді.

«RG Gold» ЖШС Anaplan автоматтандырылған бюджеттеу жүйесін баптау жүргізілді және оны пайдаланушыларды оқыту бағдарламалары әзірленді.

Anaplan бюджеттеуді автоматтандыру жүйесінің стратегиялық қаржылық-басқару шешімдерін қабылдау процесін жеделдетуге және «RG Gold» ЖШС-де уақытша, еңбек және қаржы ресурстарын үнемдеу арқылы еңбек өнімділігін арттыруға әлеуетті әсері бағаланды.

Түйін сөздер: бюджеттеу, қаржылық жоспарлау, автоматтандырылған бюджеттеу жүйесі, тау-кен өнеркәсібі, алтын өндіруші компания.

Алғыс: Мақала 0123РКН0009 ««RG Gold» ЖШС тау-кен өндіру кәсіпорнын бюджеттеуді автоматтандыру жүйесін әзірлеу» бағдарламасы бойынша қолданбалы ғылыми-зерттеу жұмысы шеңберінде дайындалды.

ПРОЕКТИРОВАНИЕ И ВНЕДРЕНИЕ АВТОМАТИЗИРОВАННОЙ СИСТЕМЫ БЮДЖЕТИРОВАНИЯ НА ГОРНОДОБЫВАЮЩЕМ ПРЕДПРИЯТИИ: КЕЙС ТОО «RG GOLD»

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АННОТАЦИЯ

Настоящая статья направлена на исследование процесса проектирования и внедрения автоматизированной системы бюджетирования на горнодобывающем предприятии с целью представления обзора методов, инструментов и этапов внедрения, а также анализа преимуществ и практических примеров использования данной системы.

Целью исследования является выявление особенностей бюджетного процесса и разработка рекомендаций по успешной реализации автоматизированной системы бюджетирования для улучшения финансового управления и повышения эффективности горнодобывающего предприятия.

Методология исследования. В работе использованы следующие научные методы: сравнительный анализ; синтез; методы систематизации и обобщения, глубинного интервью, SWOT-анализа.

Оригинальность / ценность исследования. Ценность данного исследования состоит в выявлении ключевых проблем бюджетирования промышленных предприятий Республики Казахстан, выработке методологии проектирования и внедрения автоматизированной системы бюджетирования золотодобывающей компании ТОО «RG Gold». Внедрение автоматизированной системы бюджетирования на предприятии позволило сократить время, затрачиваемое на консолидацию данных при формировании бюджетных заявок, снизить риск человеческого фактора, увеличить время на прогнозирование и моделирование бюджета для принятия управленческих решений и повышения конкурентоспособности на рынке.

Результаты исследования. На основе диагностики, SWOT-анализа действующей системы бюджетирования в системе финансового управления ТОО «RG Gold» и экспертного опроса по выявлению ее ограничений определены потребности пользователей к процессу ее автоматизации.

Спроектирован модельный продукт по автоматизации системы бюджетирования с функциональным тестированием бюджетной кампании ТОО «RG Gold» на 2024 год.

Проведена настройка автоматизированной системы бюджетирования Anaplan ТОО «RG Gold» и разработана программы обучения его пользователей.

Оценено потенциальное влияние системы автоматизации бюджетирования Anaplan на ускорение процесса принятия стратегических финансово-управленческих решений и повышение производительности труда посредством экономии временных, трудовых и финансовых ресурсов в ТОО «RG Gold».

Ключевые слова: бюджетирование, финансовое планирование, автоматизированная система бюджетирования, горнодобывающая промышленность, золотодобывающая компания.

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ИМПОРТОЗАМЕЩЕНИЕ КАК СТРАТЕГИЯ РАЗВИТИЯ СТРАН С ПЕРЕХОДНОЙ ЭКОНОМИКОЙ: ОПЫТ КАЗАХСТАНА

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АННОТАЦИЯ

Цель исследования – раскрыть роль политики импортозамещения Казахстана в выборе экономической траектории развития экономики с позиции ее декарбонизации и расширения международного сотрудничества.

Методология: теоретико-методологическая основа исследований базируется на методах системного и структурного анализа, позволяющих изучить сущность политики импортозамещения и выявить степень ее влияния на экономику Казахстана Научно-методический аппарат включает ретроспективный, причинно-следственный, текущий и перспективный анализ, сопоставление статистических данных открытого доступа, характеризующих политику импортозамещения.

Оригинальность / ценность исследования заключается в обосновании ускорения адаптации институциональных рамок к новым реалиям, что обеспечит поддержку приоритетных секторов экономики как лидеров нового технологического уклада.

Результаты исследования – определены структурные ограничения экономики, которые необходимо принимать во внимание при реализации политики импортозамещения. Выявлены наиболее проблемные сектора экономики Казахстана с точки зрения зависимости от поставок импорта. Сформулированы приоритетные направления политики импортозамещения в контексте нарастания геополитических рисков и трансформации глобальных цепочек создания стоимости. Выделены ключевые аспекты трансформации реального сектора экономики Казахстана, имеющего потенциальные возможности снижения импортозависимости и роста привлекательности у иностранных инвесторов. Обоснована роль цифровых решений в реализации политики импортозамещения.

Практическая значимость исследования. Казахстан адаптирует накопленный мировой опыт формирования политики импортозамещения. Пример Казахстана может быть полезным странам с переходной экономикой, стремящимся к росту самообеспеченности и конкурентоспособности реального сектора экономики, расширяющим свое присутствие на международных рынках.

Ключевые слова: Казахстан, переходная экономика, государственное регулирование, импортозамещение, обрабатывающая промышленность, предприятие.