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Research paper



Improvemento Financial Activity Management by the Information System

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Abstract

A special place in financial management is financial planning, which is the process of developing a system of financial plans and indicators to ensure the development of the company with the necessary financial resources and increase the efficiency of its activities in the forthcoming period.
In this study, the analysis and reengineering of the business processes of the enterprise "KZTAiA", in accordance with the concepts of process-task management technology. As a result, the main business processes are identified and the links of their tasks are revealed. The paper considers the project of the subsystem "Financial management", which presents the organizational and logical essence of the solution of its tasks, internal and external information links.
The task "Formation of the budget for spending money" of the subsystem "Financial management" was also developed and the business case for the development and implementation of the task was made. Total development costs - 41198 rubles, Labor saving – 5831,83 rubles. Based on the methodology for estimating net cash flow, a simple payback period of the project is found - 10.3 months and the discounted payback period of the project is 10.7 months. The introduction of this task gives a managerial effect and a synergetic effect, which is related to the use of the results of solving this problem in solving other problems.
The object of the research is the enterprise KZTAiA - Kama Plant of Brake Apparatus and Aggregates - an enterprise for the production of special tools and technological equipment, fire trucks and other special equipment, equipment repair, supply of standard and special tools.

Keywords: *Information system, business processes, design, financial management, business process reengineering.*

1. Introduction

Financial management of the enterprise assumes the consistent activity of its employees in the organization and management of financial relations, cash funds and cash flows.
In order to economically save financial resources, reduce costs, increase flexibility in managing and controlling the cost of services, and to improve the accuracy of planned targets, enterprises are increasingly using the budget planning system for structural units and the entire firm.
The purpose of this study is to develop an information system of the enterprise, which allows to improve the system of forming the budget for spending funds in the areas of activity at the enterprise KZTAiA.
When designing the subsystem "Financial management" and developing the task "Formation of the budget for the expenditure of funds", the information on the formation of the budget for the spending of money by OOO KZTAiA served as the information base.
The main activities of LLC "KZTAiA" are all types of transportation services, maintenance and repair of vehicles.
The essence of the business process "Finance" is the management of the company's finances. Within the framework of this business process, the company's financial management system is designed to organize the interaction of financial relations, funds of funds and cash flows; as well as for the relationship between the assets of the enterprise (assets) and sources of cash (liabilities) with a view to effectively influencing the final results established by the enterprise in accordance with the requirements of economic laws, legislative and regulatory documents of the state, financial science provisions, as well as professionalism and experience of employees.

2. Methods

One of the main tasks of financial management of an enterprise is the optimization of financial flows in order to maximize the positive financial result. To do this, the enterprise must have a properly drawn up financial plan for its activities.
In order to economically save financial resources, reduce unproductive expenditures, increase flexibility in managing and controlling the cost of production, and to improve the accuracy of planned targets, enterprises are increasingly using the budget planning system for structural units and the entire firm.
Budgeting contributes to the correct and clear goal-setting in the enterprise, the development of a business strategy. Therefore, continuous improvement of the budgeting system is necessary.
One of the directions is the automation of tasks related to the formation of budgets, including "Forming a Budget for Spending Money".
The automation of the task is important, because at this stage a plan is drawn up in money terms, prepared and approved for a certain period of time, which shows the forthcoming expenditures for the month, and the capital that must be used to achieve the set

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goals. The task is based on the preparation of budget planning for the activities of structural units and the entire firm.
The information system is an interrelated collection of means, methods and personnel used for storing, processing and issuing information in the interests of achieving the stated goal.
In constructing the organizational and logical essence of solving the problems of the subsystems of the information system, the technology for constructing IDEF3 schemes was used.
The budget of expenses is one of the main instruments of enterprise cash management. Allows to control and manage the material and financial resources of the enterprise. The budget of expenditure (distribution of funds) contains instructions on the direction of expenditure of funds.
The problem in question already exists in the enterprise, but it is done manually, which is a rather laborious process. Therefore, for the effective work of the financial and analytical department, the automation of this task is relevant.
On the basis of spending limits, the units of LLC "KZTAiA" form applications for payments, which are agreed by the planning and budget department. The database contains information on approved applications. The budget for spending money for the month by units is formed on the basis of agreed requests. After that, a monthly budget for spending money on the enterprise is created in the context of budget items and divisions. Based on the approved BRDS and bills for payment, the units form memos in the financial and analytical department. After that the register of payments is formed. Based on the approved by the Director General of the register of payments, payment is made on accounts and a report on the execution of the budget for spending money for a month is formed.
Schematically, the organizational and logical entity is represented in Figure 1.

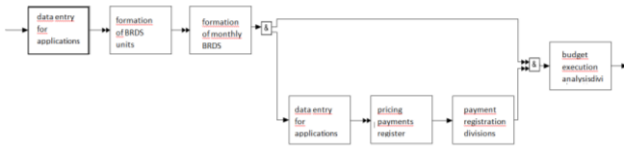

Figure 1 :- Organizational-logical essence of the solution of the problem "Budget of spending money"

Output information arrays are the following reports: the budget of the expenditure of funds per unit, the monthly budget of the enterprise, the register of payments, the budget execution report.
The software product "Formation of the budget for spending money" for the subsystem "Financial Management" was developed using the "1C: Enterprise 8.1" platform in an empty configuration.
The "1C: Enterprise 8.1" system provides for easy and quick development and modification of application solutions. One of the main advantages of the "1C: Enterprise 8.1" system is that it allows you to develop specialists who do not have in-depth knowledge and experience in system programming. It takes on a significant share of technological issues that need to be addressed when developing on conventional universal development systems. Creation of a configuration structure is performed by visual means using various designers.

3. Results and Discussion

The structure of cost changes using software is reflected in Table 1.

Table 1 - Structure of cost changes using software

	Cost budget without the use of software	**Cost budget using software**	**Struc-ture of cost changes from the use of software, rubles.**	**Structure of cost changes from the use of soft-ware,%**
Material costs	934,2	155,70	778,5	83,33
Labor costs	5950	830	5120	86,05
Depreciation of fixed assets	710,89	877,56	-166,67	-23,45
Other costs	272,3	172,3	100	36,72
Business Products	10700	10700	0	0
Total	**18567,39**	**12735,56**	**5831,83**	**31,41**

Thus, the amount of investment for the development of the task is 41198,61 rubles. The cost of solving a business problem without using specialized software per month is 18567,39 rubles, and using specialized software per month is equal to 12735,56 rubles.
Thus, the monthly savings from the use of software amounted to 5831,83 rubles.
The structure of the change in the cost of business products is reflected in Figure 3.
Calculation of the economic efficiency of software development for solving a business problem will be performed on the basis of the "Cash Flow" method using a difference approach.
The main indicators characterizing the economic efficiency and effect of this project are calculated:
1) the net present value of the project;
2) the internal rate of return of the project;
3) index of return on investment;
4) the payback period of investments (simple and discounted)
The graph of the net present value of the project versus the discount rate is shown in Figure 2.

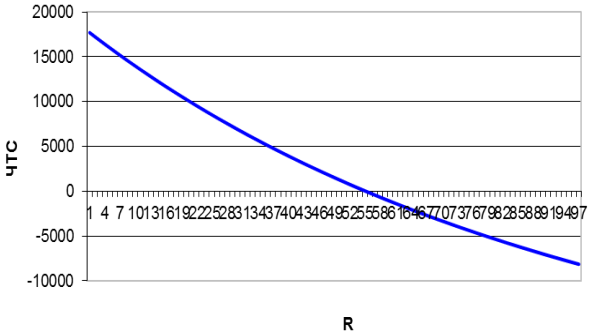

Figure 2 - graph of the net present value of the project versus the discount rate

The financial profile is shown in Figure 3.

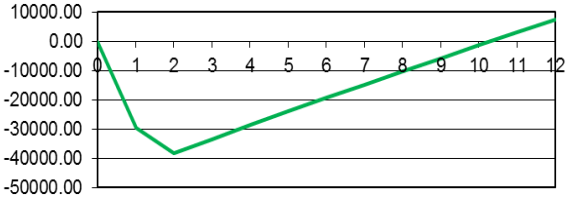

Figure 3 - Financial profile

The economic efficiency of investment in the project is provided when the following system of conditions is fulfilled

$$\begin{cases} TTS \geq 0; \\ IRR \geq R; \\ T_{disk} \leq T_{standart} \end{cases}$$

The norm of the payback period is established based on the requirements of investors, depending on the volume of investments, the amortization period, etc.

This system of conditions is satisfied:

$$\begin{cases} (TTS = 7191{,}83) \geq 0; \\ (IRR = 15{,}37\%) \geq (R = 8{,}0\%); \\ (T_{disk} = 10{,}7) \leq (T_{standart} = 12). \end{cases}$$

Therefore, the considered project from the economic point of view is effective and expedient for realization.

Along with the indicators of the economic efficiency of the investment project, there are many other indicators.

The use of modern technologies (including information technologies) can lead to a significant release of enterprise resources, which can be used to implement new projects and generate additional revenues. In addition, the introduction of modern technologies changes the qualitative characteristics of the work performed and the quality indicators of the products produced. This entails a change in the competitiveness of the enterprise and its profitability.

1. Determine the amount of resources to be released:
- material
- labor

In the conditions of resource scarcity, the volume of possible additional income is calculated to use these resources to solve other tasks and perform work.

2. Relative changes in the quality characteristics of output products (the results of solving problems and performing work) are estimated. The change in these characteristics changes the commodity properties of the products.

3. The effectiveness of the introduction of the information site of the enterprise is calculated.

To determine the key performance indicators, you need to address the main purpose of the information site. The developed site has the main goal - an increase in the number of applications, a reduction in advertising costs and, accordingly, an increase in the total profit from the sale of services. Accordingly, the main indicator of the effectiveness of the introduction of the information site is the growth of profit from the sale of services.

The criterion of managerial efficiency is the reduction of time spent on solving a problem, changing qualitative characteristics, and minimizing labor costs. By reducing the number of employees to solve this problem, it becomes possible to solve additional tasks with free human resources.

At the enterprise LLC "KZTAiA" at the decision of the task "Formation of the budget for the expenditure of funds" at the present moment, 3 people are involved, spending 86 hours at the same time. When implementing the software implementation of the task, the labor intensity is reduced to 12 hours.

Then, the absolute indicator of saving labor resources will be: man-hours.

Thus, due to the introduction of the software product in the solution of problems, the release of labor resources takes place, which will allow solving other problems more efficiently, due to the appearance of additional time for workers.

Relative labor productivity index:

$$I_{nm} = \frac{T_1}{T_0} = \frac{12}{86} = 0{,}139 \text{ or } 13{,}9\%$$

Relative indicator of labor saving:

$$I_{эк} = \left(1 - \frac{13{,}9}{100}\right) * 100 = 86{,}1\%$$

This means that when implementing a software product, only 13.9% of the time is required compared to manual processing, and a labor saving of 86.1%.

The cumulative effect of solving the problem of "Forming a budget for spending money" is not only in the economic and managerial effect obtained, but due to the interaction of this task with other tasks, a synergistic effect arises.

With the synergistic effect, the effect of aggregate influence is achieved through connections, both internal and external.

The results of the solution of the task "Formation of the budget for spending money" are used in other tasks "Analysis of budget execution" and "Analysis of payments to the state budget" of the business process "Finance", as well as in some tasks of the business process "Accounting", thereby forming synergistic effect of the first kind. In turn, the results of these tasks can be used to solve other tasks in other business processes, in this case it is the task of "Accounting for financial transactions" of the business process "Accounting". In such problems a second-level synergistic effect arises.

4. Summary

In this study, the task "Formation of the budget for spending money" of the subsystem "Financial Management" was developed and an economic justification for the development and implementation of the task was made. Total development costs - 41198 rubles, Labor saving – 5831,83 rubles. Based on the methodology for estimating net cash flow, a simple payback period of the project is found – 10,3 months and the discounted payback period of the project is 10,7 months. The introduction of this task gives a managerial effect and a synergetic effect, which is related to the use of the results of solving this problem in solving other problems.

5. Conclusions

In the course of the research, the analysis and reengineering of the enterprise's business processes was carried out, in accordance with the concepts of process-task management technology. As a result, 12 main business processes were identified and the links of their tasks were revealed. The organizational structure of the enterprise corresponds to the structure of business processes.

For each business process, there is a set of indicators by which you can determine its effectiveness. The indicators of the effectiveness of the business process "Finance" are considered in detail.

A project of an information system with application of process-task technology was developed.

The presented project of the information system includes subsystems corresponding to the business processes of the enterprise and fully reflects the real objectives of the enterprise. A detailed project of the subsystem "Financial Management" is considered, which presents the organizational and logical essence of the solution of its tasks, internal and external information links.

In the work the task "Formation of the budget for spending money" of the subsystem "Financial management" was developed and the economic substantiation of the development and implementation of the task was made. The total cost of developing -41198 rubles, Labor saving – 5831,83 rubles. Based on the methodology for estimating net cash flow, a simple payback period of the project is found – 10,3 months and the discounted payback period of the project is 10,7 months. The introduction of this task gives a managerial effect and a synergetic effect, which is related to the use of the results of solving this problem in solving other problems.

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