International Journal of Engineering & Technology, 7 (3.27) (2018) 550-555

International Journal of Engineering & Technology

Website: www.sciencepubco.com/index.php/IJET

Research paper



Development and Improvement of Business Process in the System "Bitrix 24" with the Use of Web Technologies

Izida I. Ishmuradova [1], Ilnur I. Makhmutov[1], Albina A. Shakirova[1]

[1]Kazan Federal University
**Corresponding author E-mail: IIIshmuradova@kpfu.ru@*

Abstract

This article presents an analysis of the main functions of enterprise business management systems. The corporate portal Bitrix24 is considered which meets all the requirements of business process management systems. To ensure the integrity and availability of information, it is advisable to use the enterprise corporate portal within the Internet or Intranet as a platform for the BPM system. The use of the corporate portal is one of the modern trends in the management of the company's activities.
The main principle of development of any enterprise is management built on business processes. In process management the key performance indicators of the enterprise are radically improved.
Bitrix24 is the system for managing the company's internal information resource which unites people, processes and information in the company [1]. The software product is based on the Bitrix Framework. Technically the portal consists of a number of built-in modules, such as CRM, social networking, business processes, telephony, etc., and components.
The article presents the development of a business process in this system. For the production company an improved business process for working with clients in CRM was designed and built. The business process was designed to automate routine operations and optimize the workflow of company employees.

Keywords: *business processes, BPM-system, corporate portal Bitrix24, Bitrix24, CRM*

1. Introduction

With the development of modern technology, the topic of process automation in companies is becoming more and more relevant. Daily employees are engaged not only in their main work but also face the need to document various documents, for example, paying bills, filing applications. Constant daily operations, such as walking around the offices, finding the right people and other actions, take a lot of time, which means they reduce the efficiency of the company's employees.
Optimization of business processes of the enterprise is an important component for any commercial structure. For the successful implementation of the company's business processes they must be understandable for every employee of the enterprise, while not only the process of performing the activity but its ultimate goal should be clear. Under the business process is understood the sequence of actions, performing which the goal is achieved which has value for the organization [2].
The use of the process approach to the organization of the work of the enterprise to date is a quality standard. The basis for creating an effective organization is:
- optimization of its internal business processes;
- implementation of a quality management system;
- implementation of optimal IT solutions.

The implementation of any IT-system requires a lot of time, effort and money. And when it comes to such a global solution as the BPM-system, attention has to be paid even more. BPM (English business process management) is the concept of process management of an organization which considers business processes as special resources of the enterprise continuously adapted to constant changes [3].
An obligatory requirement here is the development of the business model (business architecture) of the enterprise which includes the modeling and documentation of all its business processes. BPM-systems support various business process modeling notations:
- structural analysis and design of SADT / IDEF0;
- diagrams of data flows DFD;
- modeling notation and document standard for IDEF3 processes;
- BPMN workflow modeling;
- ARIS methodology, etc.

Even a well-designed process will not bring about the desired effect if mechanisms of control over the correctness of its compliance are not established. In addition the business processes of any enterprise are not a closed system, they are subject to external events that cause them to change and react to the receipt of external information. Internal activity of the enterprise is also constantly changing, so it is necessary quickly adjust and re-engineer the business architecture of the enterprise with the information on changes to employees. From the point of view of information technology for the successful management of the company's activities, it is now necessary to introduce the functionality to manage the company's business processes in the company's corporate system. To ensure the integrity and availability of information, it is advisable to use the enterprise corporate portal within the Internet or Intranet as a platform for the BPM system. The use of the corporate portal is one of the modern trends in the management of the company's activities [4].
An example of such a platform is the corporate portal Bitrix24. In the finished solutions the general functionality and structure of the portal have already been developed. As a rule the solution code is

Copyright © 2018 Authors. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

open for revision, customizing the portal for the company's features.

2. Methods

The corporate portal Bitrix24 is a popular system for organizing joint work of employees of enterprises and their relationships with customers, to monitor performance discipline and automate work processes. The software product is based on the Bitrix Framework. Technically the portal consists of a number of built-in modules, such as CRM, social networking, business processes, telephony, etc., and components.

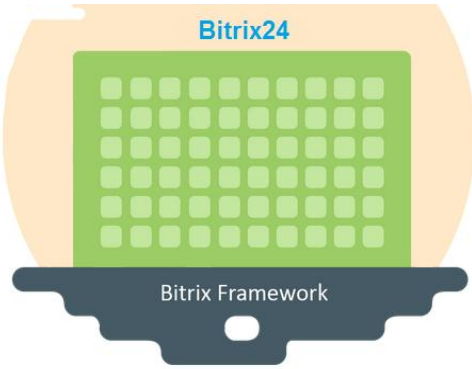


Figure 1: The corporate portal Bitrix24 on the platform Bitrix Framework

At the same time, Bitrix24 covers the following possibilities [5]:
1. Developing of the organizational structure of the company.
2. Designing of the company's business processes.
3. Developing and changing of the strategy of business processes.
4. Implementation and support of business process execution.
5. Interaction between performers and managers.
6. Publication of all regulatory documents.
7. Collection of benchmarks and reporting.

In process management the key performance indicators of the enterprise are radically improved. As a result of designing business processes the answer can be obtained to the question "How to make the enterprise competitive, how to improve its financial and social results?" [6].

The Business Processes module is a powerful tool for designing and automating the business processes of the enterprise, managing all stages of the process and the actions necessary for its execution. With this module you can visually design the sequence of business process steps and also supplement it by developing your own tools for the portal. Thus Bitrix24 allows to optimize the company's business processes, to reduce labor costs.

CRM (Customer Relationship Management System) is a customer relationship management system designed to improve sales, optimize marketing and improve customer service. CRM stores customer information and history of relationships with them for subsequent analysis of the results [7].

Business processes should always be considered as an addition to any corporate portal tool and should be used with reference to any entity in Bitrix24.

- General stages of designing a business process (BP):
- The first step is the analysis and formulation of the problem. Transferring theoretical knowledge to paper in the form of an algorithm.
- After the analysis of the scheme the development of the BP is started with the Bitrix24 software. Development includes:

• Create a BP template.
• Form the startup form. Additions of fields that will trigger the process.
• Create variables. Variables are used to temporarily store the data required for the process being executed. Values of variables are stored as long as the business process is running.
• Constructing constants. Constants are predefined values that remain unchanged during the execution of a business process. Their value needs to be adjusted before the start of the business process.
• Modeling BP stages (tasks, cycles, etc.).
• Programming commands with PHP (if necessary).

- Testing the business process.
- Transferring the process to the customer's server.
- Experienced operation.

Having a formalized strategy in textual form or graphically, with the help of block diagrams, it is possible to start designing the company's business processes, that is to determine the activities that employees of the company must implement to realize the strategy and achieve the set goals [8].

Business processes in Bitrix24 are built using a convenient visual designer of the business process designer, a tool that is part of the Business Processes module which is designed to create and modify business processes. The mechanism of designing business processes is realized through visual programming using drag & drop technology. The business process template is created in a visual designer in which the developer selects the necessary blocks and functions. Visual designer allows you to design a sequence of stages of the business process as well as complement it, developing your own tools for the portal. This tool cannot be called a classic notation of BPMN but certain of its rules are observed [9].

When creating a process you must select the category for which the business process is configured, if necessary, you can write custom parameters and variables and in business processes there is support for arbitrary PHP code which in itself is interesting and opens up great opportunities in designing the process but requires certain skills.

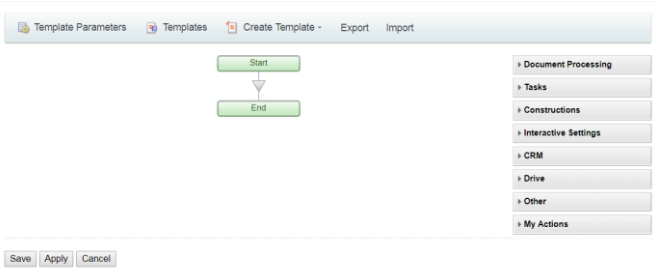


Figure 2:. The Visual Designer

The appearance of the main working area depends on the type of PSU:

• In the case of the template with statuses, the main workspace will look like:

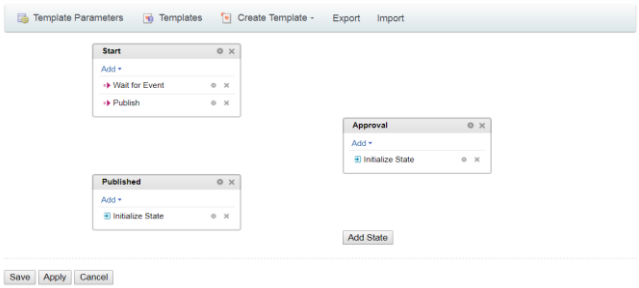


Figure 3:. Business process template with statuses

When editing each individual action, the form of editing a sequential subprocess will open.

• In the case of a sequential process, the main workspace will look like this:

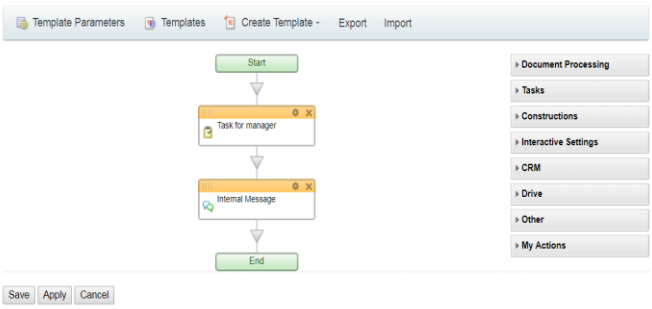


Figure 4:. The pattern of a sequential business process

And for effective management business processes must be explicit, executable and understandable. The corporate portal Bitrix24 provides information support for all business process management cycles from development to monitoring and analysis of their execution.

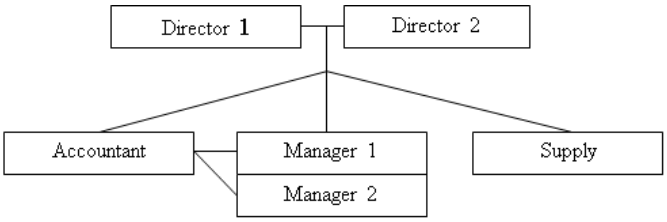
3. Results and Discussion

In the Bitrix24 system an improved business process (BP) for working with customers in CRM was designed and built for the manufacturing company. The BP is designed to optimize the company's business processes related to the formation of commercial offers, contracts, accounts, various acts and other documents. The BP was designed to automate routine operations and optimize the workflow of company employees.

The business process consists of two directly interconnected subprocesses for the CRM entity - Lid and Deal.

The deal is the ultimate goal and the desired result of working with Lid.

The structure of the users of the portal participating in the business process:



Algorithm of the business process

1. A manager makes the potential client to the CRM. The process is run on the Lid template.

2. Automatically from the data of Lid is formed The Commercial Proposal (CP) on the form of the organization. The tasks are set. The Commercial Proposal is sent to the agreement of the chief.

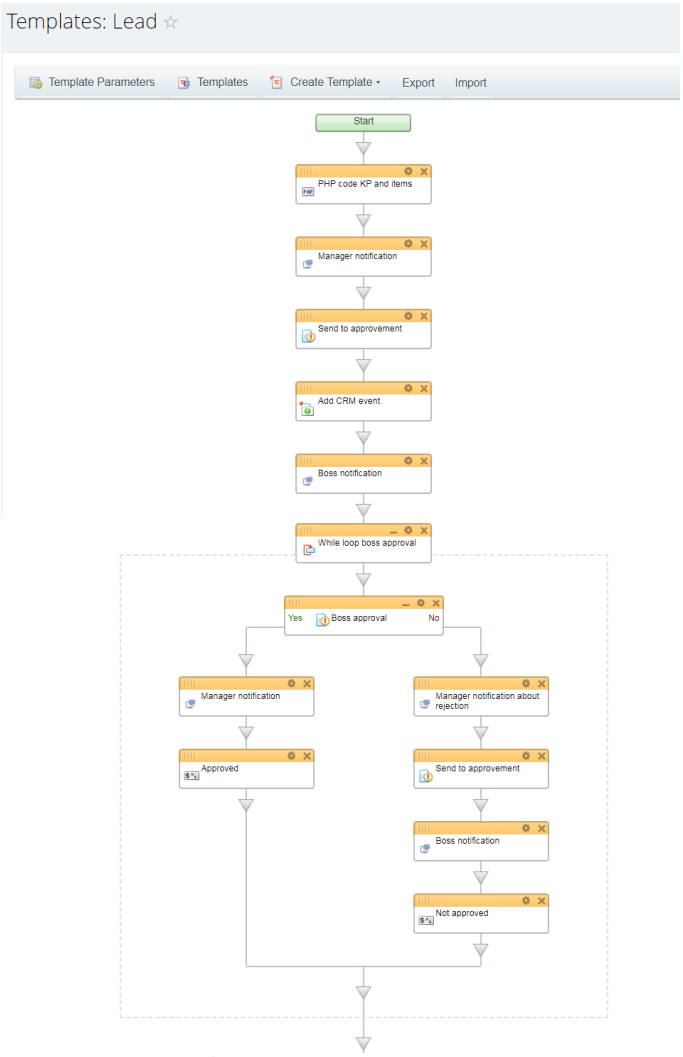


Figure 5:. Start of the business process using the Lid template

3. Waiting for the client's decision. If the client is ready to purchase equipment - the manager requests the partner card, otherwise the BP ends, and the Lid becomes "substandard". The manager enters data on the company on the portal in

CRM.

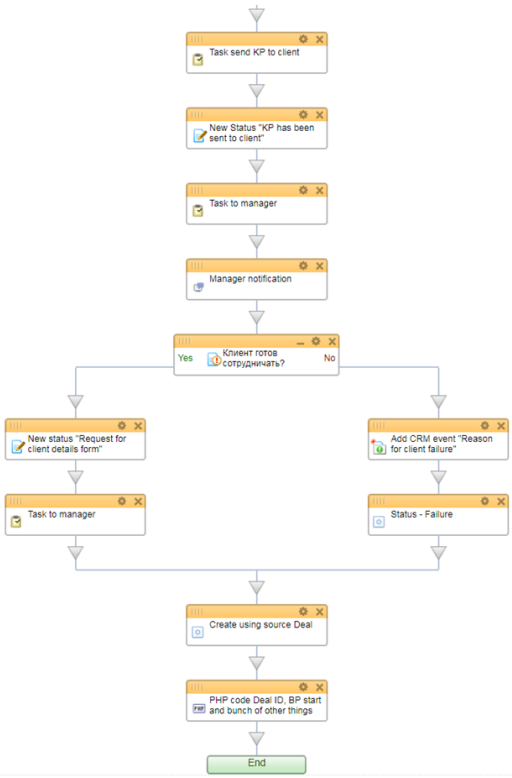


Figure 6:. Completion of the business process following the Lid template

4. Automatically the script creates a deal. At the same time the connection between Lid, KP, the Company and the Deal remains (all this is implemented using the php script). The business process continues with the next subprocess template for the nature of the Transaction.

5. The contract is formed and the bill for payment. The formed documents are sent for agreement to the head. The manager is given tasks with specific deadlines.

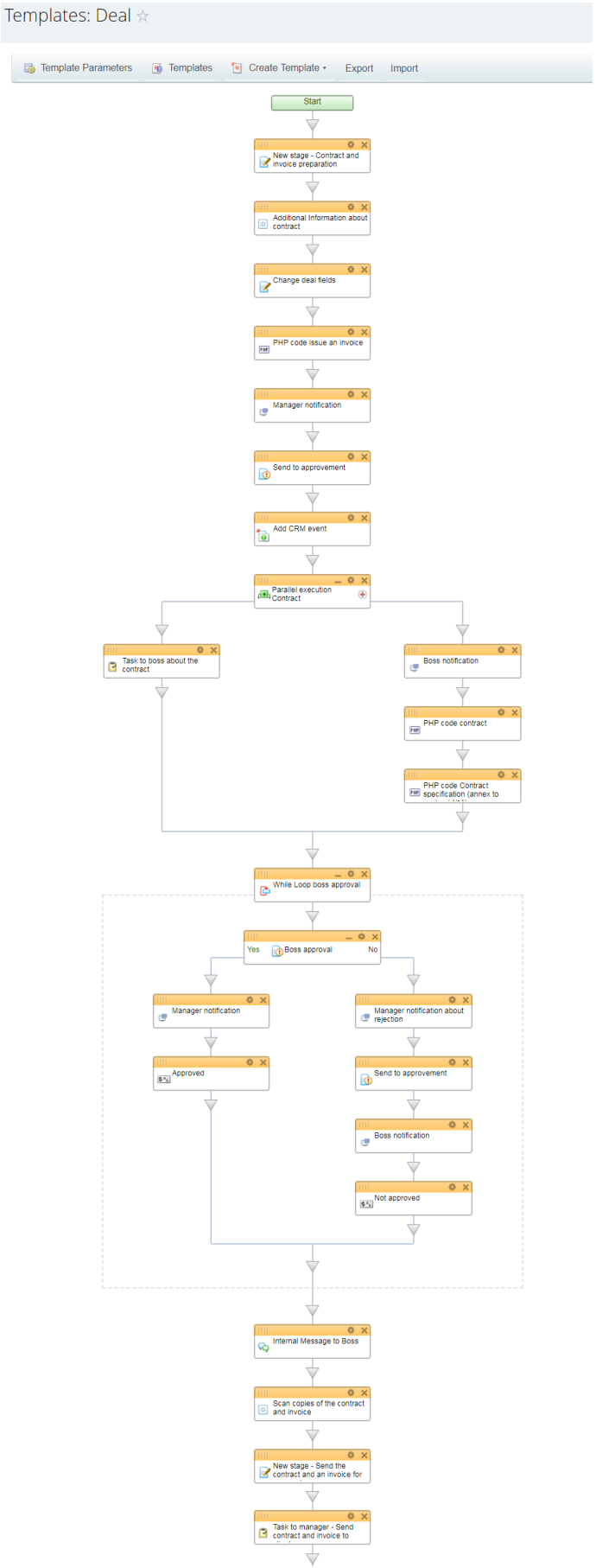


Figure 7:. Business process continues through the template Transactions

6. After receipt of the first payment the accountant enters the data into the portal.
The task is set for supply with the terms of shipment specified in the contract, the file "Set sheet" is attached to the task.

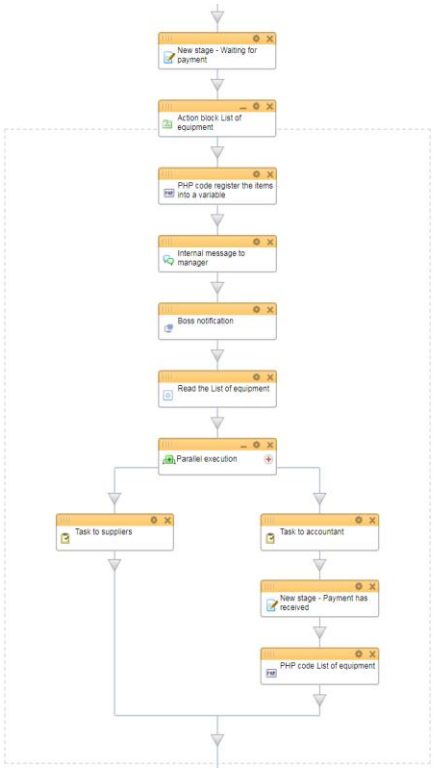


Figure 8:. Block of actions "List of equipment"

7. After the equipment is completed, a "The notice of readiness for shipment" is formed. The manager sends the document to the client along with the second account.
After receipt of money, the accountant enters the data into the portal. From the data on the customer (including the list of goods), shipping documents (acts) are formed and attached as an attachment to the task that is put to the manager.

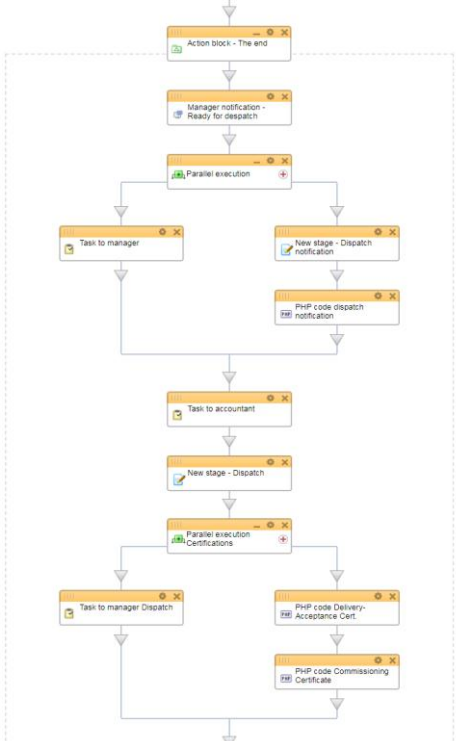


Figure 9:. Block of the final actions of the business process

8. After completing all the installation work the manager attaches the output documents to the transaction in the CRM.
9. Invoiced for the last payment in accordance with the terms of the contract. After the receipt of money the manager is tasked to contact the client and receive a feedback letter. The feedback is attached to the transaction.

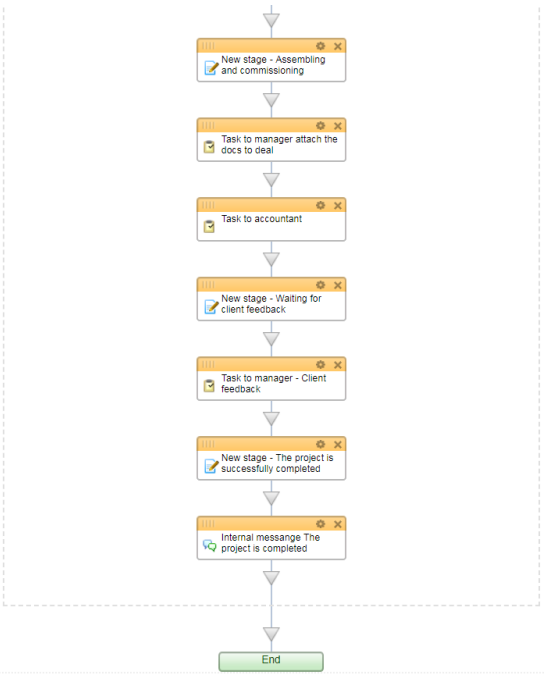


Figure 10:. The business process is completed successfully

10. The project and, accordingly, the business process are completed.
The main notes in the development of the BP:

- The business process is configured so that at each key stage the transaction stages and Lid status are automatically changed.
- Such operations as:
  - the formation of documents (a contract, an annex, an act);
  - binding documents to tasks;
  - Lid entity link and Transaction.
- The documents are generated in PDF format for which a TCPDF library was connected.

4. Summary

Thus the efficiency of the enterprise today is determined by the organization of management of this enterprise. The use of the corporate portal is one of the modern trends in the management of the company's activities. Bitrix24 corporate portal provides information support for all business process management cycles, from development to monitoring and analysis of their execution and also meets all the requirements of business process management systems.
In Bitrix24 an advanced business process for working with clients in the CRM module was designed and built for the manufacturing company. The BP is designed to optimize the company's business processes related to the formation of commercial offers, contracts, accounts, various acts and other documents.
It was written a lot of PHP code to customize the business process for the independent formation of documents (commercial proposals, contracts, invoices, various acts), binding documents to tasks and for communication of CRM entities, so that the process automatically continued its way from Lid to the Transaction.
As a result of the development of this business process the employee does not need to remember the rules of procedure approved

by the management. The entire sequence of customer management at the stages of the transaction established in the company is already pre-programmed in the business process. The employee is automatically assigned tasks or tasks that he must perform. The risk of the human factor is reduced, the probability that the employee will do something wrong is significantly reduced. The business process will constantly remind the responsible manager of the unfinished transaction and will not allow to forget about the client, thereby increasing the success of concluding transactions between companies.

5. Conclusions

Based on the results of the work it was decided to use the corporate portal as a platform for the BPM-system. The use of the corporate portal is one of the modern trends in the management of the company's activities. The main principle of development of any enterprise is management built on business processes. In process management the key performance indicators of the enterprise are radically improved. The corporate portal Bitrix24 meets all the requirements of business process management systems.

Bitrix24 is a system for managing the company's internal information resource, which unites people, processes and information in the company.

In this paper the business process for working with customers in the CRM module for a manufacturing company developed in the Bitrix24 system is presented. The business process was designed to automate routine operations and optimize the workflow of company employees.

Development of business processes in Bitrix24 - visual programming with support for arbitrary PHP code, which in itself is interesting and opens up great opportunities in designing the process but requires certain skills. In addition to knowledge of the subject area in which the template is designed, and the knowledge of the real process that needs to be automated, a task statement, algorithmization and testing is required.

As a result of the development of this business process, the employee does not need to remember the rules of procedure approved by the management. The entire sequence of customer management at the stages of the transaction established in the company is already pre-programmed in the business process.

Acknowledgements

The work is carried out according to the Russian Government's Program of Competitive Growth of Kazan Federal University.

References

[1] Shakirova A.A., Gareeva G.A., Grigorieva D.R. Designing business processes in the Bitrix system24 / International Scientific and Practical Conference: RESEARCH, DEVELOPMENT AND APPLICATION OF HIGH TECHNOLOGIES IN THE INDUSTRY (Tyumen, January 17, 2018). - Sterlitamak: AMI, 2018. - p. 180-183.

[2] Becker, J., M. Kugeler and M. Rosemann. Process Management: A Guide for the Design of Business Processes. - Springer, 2010.

[3] HUANG, S.Y., LEE, C., CHIU, A. AND YEN, D. C. How business process reengineering affects information technology. - Inf Syst Front, 2014.

[4] Mukhina Yu.R. The main features of enterprise business process management systems // Young Scientist. - 2014. - № 13. - P. 154-156. - URL: https://moluch.ru/archive/72/12292/ (date of circulation: 19.12.2017).

[5] Shakirova A.A., Gareeva G.A., Grigorieva D.R. Business process management systems of the enterprise / International scientific-practical conference: IMPLEMENTATION OF THE RESULTS OF INNOVATIVE DEVELOPMENTS: PROBLEMS AND PROSPECTS (Samara, January 08, 2018). / in 2 hours Part 1 - Sterlitamak: AMI, 2018. - p. 210-212.

[6] Susan Page, The Power of Business Process Improvement. - AMACOM, 2010. - 338 p.

[7] Shakirova AA, Makhmutov II Management of business processes in the Bitrix24 / IX Kama Readings program: All-Russian Scientific and Practical Conference. At 3 o'clock Part 2. April 21, 2017 [Text]: Sat-to the doc. / Ed. Dr. Tech. L.A. Simonovoy. - Naberezhnye Chelny: Publishing and Printing Center NCHI KFU, 2017. - S. 412-415.

[8] Bradford, M. and G. J. Gerard. ERP planning. - Journal of Emerging Technologies in Accounting, 2015.

[9] Chukarin A.V. Business processes and information technologies in the management of a modern infocommunication company / A.V. Chukarin. - Moscow: Alpina Pablisher, 2016. - 512 c.

[10] Ishmuradova I.I., Ishmuradova A.M. Stochastic modeling of economic activity of costs on Innovation of the organization of the Republic of Tatarstan, in the formation of business processes // Revista Publicando – 2017. – Vol. 4 – No 12. (1) P. – 545-559.

[11] Shinkevich A.I., Galimulina F.F., Moiseyev V.O., Avilova V.V., Kuramshina K.S., Ishmuradova I.I. (2016). Features of Integrative Relations between Science, State and Industry in Russia and Abroad, International Review of Management and Marketing, 6(S2), 142-148.

[12] Shinkevich M.V., Shinkevich A.I., Chudnovskiy A.D., Lushchik I.V., Ishmuradova I.I. (2015). Formalization of Sustainable Innovative Development Process in the Model of Innovations Diffusion, International Journal of Economics and Financial Issues, 6(1), 179-184.