International Journal of Engineering & Technology, 7 (3.2) (2018) 40-45

International Journal of Engineering & Technology

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

Research paper

Business Processes Administration at a Construction Enterprise

Nadiya Bakalo[1*], Mariya Hunchenko[2], Viktoriia Makhovka[3]

[1]*Poltava National Technical Yuri Kondratyuk University, Ukraine*
[2]*Poltava National Technical Yuri Kondratyuk University, Ukraine*
[3]*Poltava National Technical Yuri Kondratyuk University, Ukraine*
**Corresponding Author E-Mail: Bakalo1605@Gmail.Com*

Abstract

The article deals with the theoretical essence and meaning of the term "administration". The administration of construction enterprises is considered from the viewpoint of the process approach and focused on business processes that are described, regulated, are constantly monitored and subject to adjustments in case of implementation errors detection or deviations from the results. The authors distinguish two approaches to the administration of business processes, which are advisable to use at construction enterprises: improving existing business processes and their reengineering.

Keywords: *administration, business process, reindeniring, benchmarking, resources.*

1 Introduction

The dominance of innovation development concept in the post-industrial economic theories defines the strategic priorities in management of most enterprises. Including the construction industry companies with target objectives and tasks focused on innovation development. Ander the conditions of looking for ways out of the current transformational construction enterprises crisis, an important and urgent task is to develop a systematic approach to the formation of mechanism of it management and administration.

Today, for enterprises engaged in construction activities, it is urgent to address the problems of increasing competitiveness and retaining leadership in their market sector. The main goal of the activity of any enterprise is to increase the efficiency of the business. Achieving this goal can be facilitated by effective administration of business processes. In this case, the orientation of construction companies on business processes is due to the active introduction of automatic management into practice. An important condition in this case is not only the establishment of business processes as one of the areas of work with the internal environment, but also bringing them in line with the rapidly changing requirements of the external environment.

2 Main Body

In the conditions of rapid changes in the economy of the state, effective business management requires the introduction of new methods and tools that will allow to react quickly to changes in the environment of their economic activities. It should be noted that the term "business administration" was more often encountered, which implies the application of qualitatively new approaches to management, which will be based on considerable practical experience and practical practical skills.

Traditionally, the meaning of "administration" was considered as the state management activity, a set of state bodies exercising control functions [3]. Also, administration is the professional activity of managers of an organization or civil servants aimed at implementing the assigned tasks of the leadership and finding the best ways to solve them [4]. According to the approach of the American school of management, the term "administration" means - the management and control of the execution of orders at the level of top management or the government of the country. Administration is the activity of the organization's management apparatus, which is aimed at fulfilling by subordinates their duties and professional functions in accordance with established standards and requirements [4]. It is advisable to note that in modern conditions of internationalization and globalization, at the initial stage of enterprise development, administration as a process of the subject's impact on the management object is able to take into account not only the situation in domestic markets and the needs of domestic consumers and investors, but also other geographic markets, depending on the possibilities of investment process and level of complexity of resource support. The management of the organization must be distinguished by universal and global views on the processes in the organization. At the same time, it is necessary to consider how the solution of one problem or task will affect other areas of the organization's activities.

Therefore, administration should be considered as an activity aimed at a systematic approach to step-by-step and coordinated organization of all management processes and aspects of the enterprise's operation with the aim of:

rhythmic work of the organization;

satisfaction of consumers' desires and observance of high growth rates of sales volumes;

formation and observance of a positive image of the enterprise;

effective use of all types of resources, interaction with public, trade union and government institutions;

providing motivation;

increase professionalism and conditions for career growth of employees in the process of achieving the goals of the organization and the growth of the company's status.

Managers and administrators in developing countries are faced with a situation that requires changes within enterprises, namely, that they can meet the new goals of social justice and earnings on stocks at the time of changing national and international markets and the further destabilizing effects of new technologies.

Administration at construction enterprises includes: their development, training and retraining of employees, investment, stimulation of demand and sales, regulation and management of staff actions.

The objectives of the organization, set and formulated by the administrator who is responsible for the development of the construction company, should be transformed into new plans and policies to be effective enough, as plans and policies are the embodiment of organizational goals. Goals that do not go into concrete plans and policies are empty concepts and have no benefit to the enterprise.

Projects of construction companies should be chosen with caution, making sure that they are realistic in terms of national, regional and local goals and resources and can be implemented at the local level. These projects require planned client deposits in terms of priorities and administration. The objectives of the project should be set out in activities that are reasonably evaluated, including who, when and where the assessment will be conducted.

The composition of internal business processes of the company is determined by the most important types of its activities in order to achieve the goals of customers and investors, which is especially important for enterprises in the construction industry. The simple application of both financial and non-financial indicators in existing business processes can lead only to minor changes, but not to cardinal improvement of the organization's activities. Achieving high performance of business processes is only one of the ways of survival, which do not provide the company with unique advantages. To achieve competitive advantages, it is necessary to be more efficient than competitors. There is no universal and unique effective methodology for creating such a management system, but it is possible to develop and apply business administration principles based on the process approach.

Considering the administration of construction enterprises from the viewpoint of the process approach, it should be noted that it is oriented to business processes, which are described, regulated, are under constant control and are subject to correction in case of detection errors or deviations from the results. It is the process approach, in which the entire activity of the organization is divided into a variety of business processes is the most acceptable and maximally contributes to the achievement of the objectives of the enterprise. With the process approach to management, each structural unit of the organization ensures the implementation of specific business processes in which it participates, improves manageability and improves overall performance.

Improvement of business processes will ensure the improvement of quantitative and qualitative indicators, as well as contribute to increasing the competitiveness of enterprises [2].

The analysis allows us to conclude that the practice of management of Ukrainian enterprises in the construction industry requires increasing the efficiency of their commercial and economic activities. The significant increase in competition from foreign companies, the high dynamism in the development of the entrepreneurial environment, as well as the economic crisis, makes it necessary to improve the administration of business processes at construction enterprises as an effective tool for increasing the efficiency of entrepreneurial activities.

It should be noted that the business process is a set of consistent, targeted and regulated activities in which, with the help of management impact and resources, process inputs are transformed into outputs - process results that are valuable to consumers. Business processes at the enterprise envisage not only the performance of any functions, but the mandatory achievement of goals and the creation of value for consumers. The business processes of an enterprise must constitute a single system aimed not only at making a profit, but also in meeting the needs of consumers, creating a consumer value of the produced goods. The generalization of theoretical developments in the field of process management made it possible to clarify the content of the concept of a "business process", which is understood as the set of successive technologically interconnected operations that use resource planning inputs at the input of the planning, as well as the organization of actions to solve tasks, and at the output, , create products that play a strategic role in the life-support of society and are of value to consumers [1].

It is established that the business process, regardless of its role in the value chain of the enterprise, has its basic elements [5]. Any business process is responsible for its implementation, as well as elements such as input, output, resources, and results (Figure 1).

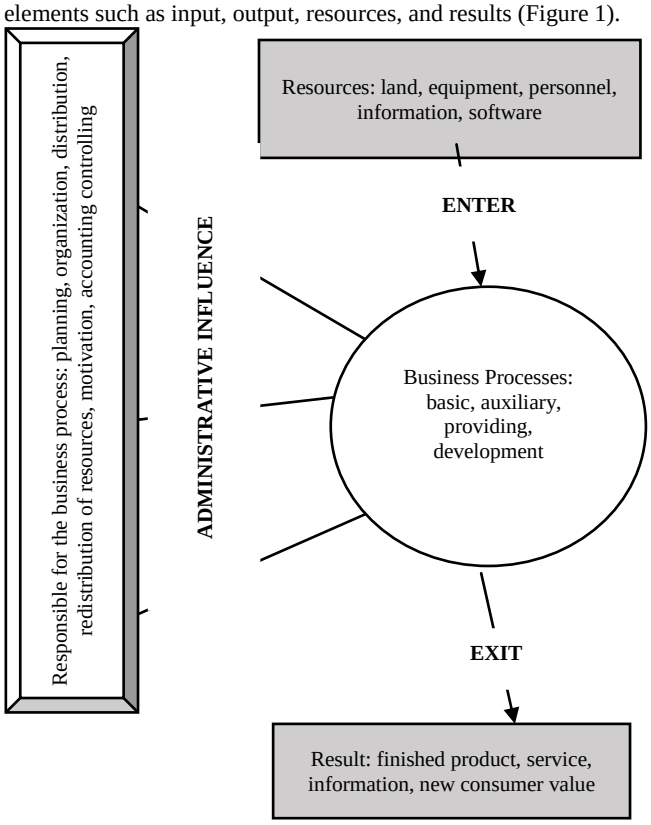

Fig. 1. Structure of the business process

Using of organizational resources and business processes to create added value in order to achieve the objectives, the enterprise needs management (administrative influence), which in practical terms means the presence of a manager (that is, a person) who has the power and authority to change the configuration of the process and spent on it implementation of resources, as well as responsible for its effectiveness and effectiveness. At the construction enterprises, the complex administration of management, operational and supporting business processes is mandatory, which are aimed at creating competitive advantages that ensure sustainable development (Figure 2).

Thus, the business process is viewed as a sequence of actions aimed at achieving the final, measurable and concrete result, which is characteristic of the process approach. In accordance with the principles of administration, the business process is divided into elements, each of which also has specific and measurable "inputs" (resources) and "outputs" -results.

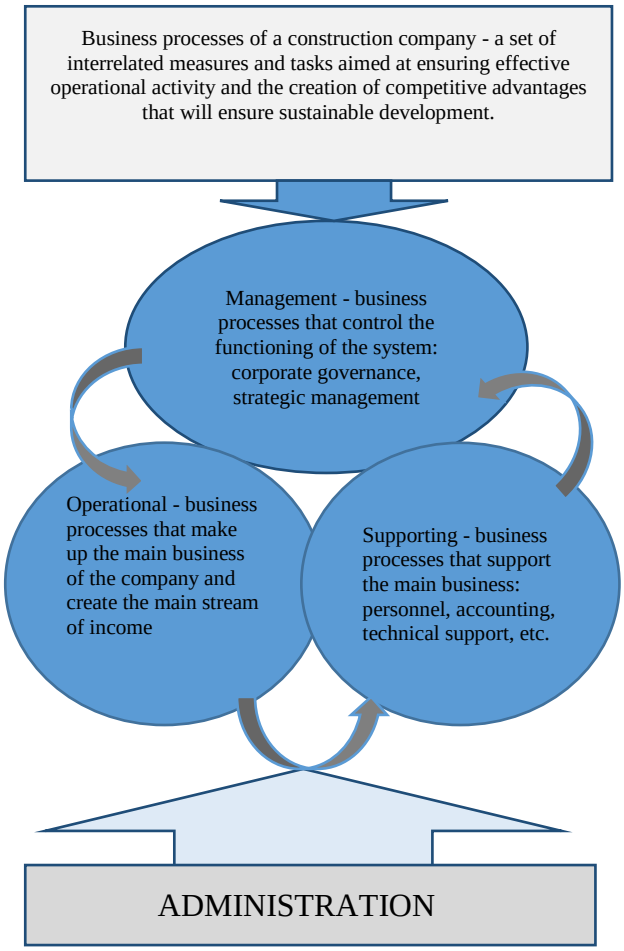

Fig.2 Main types of business processes

The manager controls them only on the borders of business processes, while not controlling the technology, namely the boundaries of the subprocesses. This is very important: the delegation of authority and responsibility really takes place, the executor can choose the technologies necessary to achieve the result. But at the same time serious requirements are put forward to the qualifications of performers. The manager in this case is no longer just a functional manager, an expert expert, but he is already a manager interested in achieving the final result. Understanding the company's goals, the parameters of effective performance and is the main difference between a manager and a functional expert. The main criterion for the effectiveness of business process administration is the achievement of goals by the department and the enterprise as a whole [7, 12].

The administration process is focused on the overall result, consisting of local achievements, which is more relevant today. It leads to a reduction in power structures due to an increase in the norm of controllability, a precise definition of the results of activity, both general and personal. This approach allows to significantly reduce the number of employees due to the reduction of duplicating functions, the activity of the construction enterprise is presented as a purposeful and effective system of employee motivation.

In the course of the study, it was determined that for more efficient administration of business processes in construction companies, it is necessary to focus on identifying "through" processes in the company, their detailed elaboration and subsequent reorganization. Based on an accurate understanding of the process, you can establish the foundation for the administration of business processes in the enterprise.

According to this approach, the process is defined as a stable, purposeful set of interrelated activities that, by a certain technology, transform inputs into outputs that are of value to the consumer. Supporters of the "through" processes approach define the process as a purposeful sequence of operations, works, which lead to a given final result. In this approach, the process is a list of the sequence of work performed alternately in different structural units, often even from different functional areas, responsible executors, incoming and outgoing documentation. This makes it possible to use various methods of the Work Flow class (IDEF3, ARIS eEPC). The method of "through" processes determines the need to eliminate gaps in cross-functional process transitions, control the effectiveness of the entire process to the client.

Business process management has emerged as part of the TQM (Total Quality Management) and Continuous Process Improvement (CPI) concepts, which assume end-to-end administration of the business process as a single entity that is performed by interconnected business units, for example from the moment of receipt of the order of the client to the moment of its realization [6, 13].

In any understanding of process management, the management of the business process in the direction of its improvement (improvement) is the fundamental and decisive factor in improving management efficiency. Two approaches to the administration of business processes can be distinguished, which should be used at construction enterprises.

The first involves improving existing business processes, and the second involves redesigning business processes and reengineering them. Improvement of business processes can lead to a noticeable improvement, but only to increase in relation to the existing level of business. Such improvement occurs due to the abandonment of secondary activities, the reformatting of structural units and the delegation of authority with the aim of increasing efficiency and saving the resources used. In contrast to this improvement, redesigning processes, in particular, reengineering, involves radical, fundamental changes. This can mean restructuring both individual processes, and the organization as a whole, as well as relationships with suppliers and consumers. Such restructuring is carried out after careful analysis of existing business processes and rethinking of new ways of their effective interaction.

The concept of business process improvement (Business Process Improvement) is based on four approaches aimed at increasing the productivity, efficiency and adaptability of business processes (Figure 3):

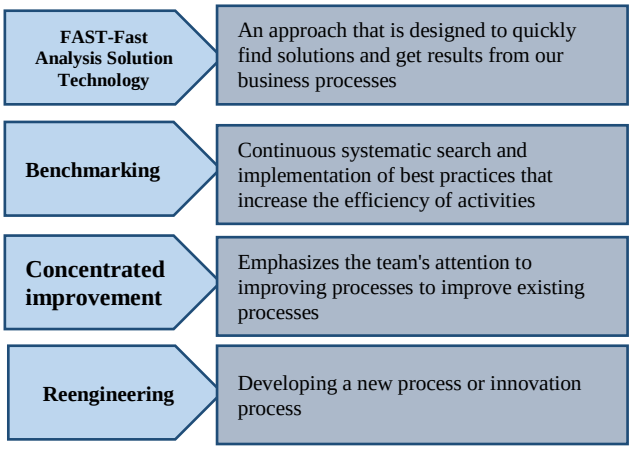

Fig.3. Business process improvement Concept

FAST-Fast Analys Solution Technology;
benchmarking;
redesign (concentrated improvement);
Business process reengineering (9, 10).

FAST rapid analysis methodology is an approach that is designed to quickly find solutions and obtain results from our business processes. It is based on the method of improvement first used in the mid-80s by IBM, and in the 90s by General Electric and Ford Motor. A methodology for rapid analysis of FAST solutions from the point of view of managing business processes for construction enterprises focused on focusing attention of individuals who administer the process in a certain process during a one-two-day

meeting to determine the ways in which the group can improve this process within the next 90 days. Before the end of the meeting, the administration approves or rejects the proposed improvements. This methodology can be used in events of any level, starting with the main processes and ending with the level of the event. An example for improvement when using the FAST approach is to reduce costs, cycle time and error rate by 5-15% [11].

Also at construction companies, in order to improve the administration of business processes, it is advisable to use the benchmarking method, taking the experience of Xerocc, which used it to radically change its strategy and received the Malcolm Baldrige award for it. This type of activity can be called a comparative analysis. Benchmarking process is a systematic method of determining, understanding and creative development of goods, services, projects, equipment, processes and procedures (established principles) of higher quality to improve the current activity of the company by examining how different companies perform the same or similar operations. Typically, benchmarking reduces costs, cycle time and error rate by 20-50%. During benchmarking, alternative solutions are provided (with the help of comparative analysis) that can lead to improved business processes, and choose the one that will bring the best result from the perspective of the company's future perspective (BFSS - Best-Value Future-StateSolution). Future-oriented solution (FSS) is a combination of corrective actions and changes that can be applied to the process under investigation to increase its value for shareholders. The most beneficial future-oriented solution (BFSS) leads to the most profitable redesign of the business processes of the enterprise from the perspective of shareholders. This solution characterizes the optimal ratio of the required cost combinations, the duration of the implementation cycle, the risk and the result, for example, return on investment, customer satisfaction, market share, risk, value added per worker, implementation time, implementation costs, and the like. When implementing a standard benchmarking project, the development of the most profitable, future-oriented solution takes 4 to 6 months. Given the experience of using this approach, it is advisable to choose for 5-20% of the company's core processes [14].

The redesign process (concentrated improvement) focuses the attention of the Process Improvement Team (PIT) on improving existing processes. As a rule, redesign is applied to those processes that function quite successfully and at the moment. Redesigning processes reduces costs, cycle time and error rate by 30-60%. When redesigning the definition process, BFSS takes between 80 and 100 days. The use of this approach in construction enterprises can be correct for approximately 70-90% of the main business processes. Such an approach is advisable to use if improving the performance of the enterprise by 30-60% can provide it with competitive advantages.

Reengineering of the process is also called the development of a new process or the innovation of a process, since its success is mainly based on the innovations and creative abilities of the team to improve the processes of the RIT. He is the most radical of all four approaches to improving business processes. This approach provides a fresh look at the goals of the process and completely ignores the existing process and the structure of the company, it all starts "from scratch", as if you are just beginning to develop this process. Reengineering, if carried out correctly, reduces the costs and cycle time by 60 to 90% and the error rate by 40 -70%. This approach is useful in cases where the process of organization of the company's activities at the moment is so outdated that it is not even worth trying to retain it or influence it by introducing BFSS, which is typical for most construction companies whose managers use outdated methods and management tools. Reengineering of business processes can be correctly used for 5-20% of the basic processes of a construction enterprise. This approach allows the RIT team to plan the process as if there are no restrictions, that is, to make the process ideal from the point of view of its construction, without limiting the availability of financial resources, information opportunities, etc. [15]. This allows us to create a new process using the latest achievements of science and technology, in particular, the automation of information processing processes, which as a result makes it possible to make a real breakthrough for the construction industry enterprise. Reengineering of business processes ensures the maximum improvement and improvement of processes, but at the same time remains the most expensive method and can be unbearable for the company, and sometimes even destructive for a sufficiently high degree of risk. Reengineering of business processes does not provide for the implementation of permanent, but minor changes, leading to a slight increase in growth (by one or even tens of percent) in improving the performance of the company. As a result of successfully conducted reengineering (rapid implementation of profound and comprehensive fundamental changes in the management system), construction companies will achieve a significant "breakthrough" in the growth of efficiency in tens and hundreds of times. The specificity of reengineering in construction enterprises is that administration is reintegrated into end-to-end business processes, for which groups of like-minded individuals who are able to carry out a wide range of activities from the beginning to the end are responsible. [11]

For example, reengineering of business processes at IBM Credit resulted in a 100-fold increase in labor productivity and a 10-fold reduction in process duration. During the reengineering of business processes in Ford, the number of the vendor payment department decreased from 500 to 125, that is, the productivity increased 4-fold. When reengineering the business processes of designing a new camera in the company Kodak, results were achieved to reduce the duration of the process by half. [5] As a result of the successful re-engineering of its "order fulfillment" business process over a period of one year, Bell Atlantic Corporation has achieved a shorter lead time for this business process (executing orders for connecting corporate customers to communication channels that provide high-speed data and video communications) from 30 to 3 days and was thus able to retain existing customers and attract many new and significantly expand the scale of their business. [2] Therefore, taking into account the experience of reengineering, it can be considered that it will contribute to the improvement of processes and the growth of performance indicators of construction companies by several times (2, 4, 10 or more), or by 50%, 70% and even 90%. With the usual improvement of business processes, such results can not be obtained, an improvement is possible in the range of 5-20% [3].

The founders of the concept of reengineering are American specialists M.Hammer (professor of the business school of Harvard University) and J.Champi (leading expert on the introduction of the ideas of reengineering, which is headed by the consulting firm CSC Index) [11]. They define the reengineering of business processes as the creation of the company anew, so to speak from scratch and define it as a fundamental rethinking and radical redesign of business processes to achieve significant improvements in such key performance indicators for modern business as costs, quality, service level and efficiency . The business process is defined as the aggregate of various types of activities within which one or more types of resources are used at the "input" and as a result of this activity a product representing value for the consumer is created at the "exit". The business process can be represented as a set of logically interrelated tasks aimed at achieving the result. At the same time, the business process is characterized by two features. First, by their market or intra-firm "solvent" customers. Secondly, it crosses the organizational boundaries, that is, it passes through more barriers that exist between the company's divisions, as well as between various companies linked by the supplier-consumer relationship, or even passes through all barriers. The business process most often does not depend on the formal organizational structure of the company. Reengineering involves shifting the emphasis of in-house management from operational specialization to cross-functional business processes, such as developing a new product or service, fulfilling customer orders, after-sales service, etc. The goal of business process reengineering at construction enterprises

is the complete and systemic modeling and reorganization of material, financial, information flows aimed at simplifying the organizational structure, redistributing and minimizing the use of different resources, reducing the period of customer needs, improving the quality of their services.

Reengineering of business processes at a construction company will provide the solution of the following tasks:

determining the optimal sequence of functions that leads to a reduction in the cycle of providing construction or repair services, customer service, resulting in an increase in the capital turnover and growth of all economic indicators of the construction company;

optimization of the use of resources in various business processes, as a result of which the costs of production and circulation are minimized, and an optimal combination of various activities is provided;

building adaptive business processes aimed at rapid adaptation to changes in the needs of end-users, production technologies, the behavior of competitors in the market and, accordingly, improving the quality of customer service in a dynamic environment;

the definition of rational schemes of interaction with partners, suppliers and customers, and, as a result, increasing profits, optimizing financial flows.

Define the main stages of business process reengineering at construction enterprises (Figure 4).

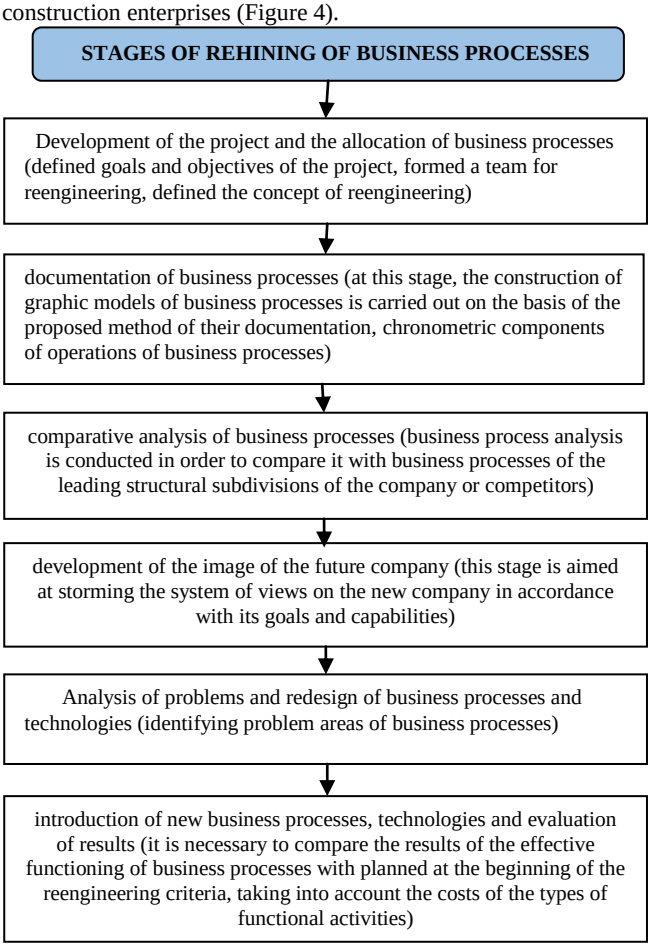

Fig.4. Stages of business processes reengineering at construction enterprises

The success of the reengineering process is determined by certain factors. First, reengineering is aimed at swift and radical transformations that will ensure a change in the state in which the construction company is at this stage. Accordingly, in order to avoid conflicts in the company, it is necessary that its personnel be adjusted to such rapid and dramatic changes in the nature of its work, the definition of the scope of work, responsibility and the mood for teamwork.

Also, the success of the implementation of reengineering determines the formation of a single for all understanding of the priority future for the company and its personal contribution to its achievements. And, of course, a significant role is played by the creation of the necessary environment and infrastructure for training, professional growth and development of creative abilities of workers. Particular attention should be paid to the fact that the success of reengineering, unlike the false vision of the majority, depends not so much on the automation of certain processes as on the proper construction and structuring of these processes, which is then embodied in automated control systems.

3 Conclusion

In our opinion, business processes should be understood as a system of continuous, interrelated, appropriately ordered and managed actions (procedures, operations, performed functions), which, in turn, is an element of the mechanism of formation of value added (consumer value) through the transformation of organizational resources , focused on achieving one common goal, which is aimed at ensuring the productivity and effectiveness of the organization as a whole and providing an added value report spine (consumer value) to the target market through the business model of the enterprise. Effective administration of business processes at construction companies will ensure: determining the optimal sequence of functions that leads to a reduction in the cycle of manufacturing and selling goods and services, customer service, resulting in increased capital turnover and growth of all economic indicators of the construction company; optimize the use of resources in various business processes, as a result of which the costs of production and circulation are minimized and the optimal combination of various activities is ensured; building adaptive business processes aimed at rapid adaptation to changes in the needs of end-users, the construction process, the behavior of competitors in the market and, accordingly, improving the quality of customer service in a dynamic environment; definition of rational schemes of interaction with partners and clients, and, as a result, profit growth, optimization of financial flows. Understanding of the essence, principles of business processes administration in market conditions gives on the one hand a clear idea of the complexity of tasks that are expressed in construction enterprises, on the other hand - they make it possible to use the administration of business processes as a management tool for the functioning of Ukrainian construction enterprises in the financial crisis, limited material and financial resources, entry into the world economic system as equal and professional partners and worthy competitors.

References

[1] Anna Sidorova, Oyku Isik, (2010) "Business process research: a cross-disciplinary review", Business Process Management Journal, Vol. 16 Issue: 4, pp.566-597, https://doi.org/10.1108/14637151011065928

[2] Björn Münstermann, Andreas Eckhardt, Tim Weitzel, (2010) "The performance impact of business process standardization: An empirical evaluation of the recruitment process", Business Process Management Journal, Vol. 16 Issue: 1, pp.29-56, https://doi.org/10.1108/14637151011017930

[3] Flavio Corradini, Andrea Polini, Barbara Re, (2015) "Inter-organizational business process verification in public administration", Business Process Management Journal, Vol. 21 Issue: 5, pp.1040-1065, https://doi.org/10.1108/BPMJ-02-2014-0013

[4] Jan vom Brocke, Theresa Schmiedel, Jan Recker, Peter Trkman, Willem Mertens, Stijn Viaene, (2014) "Ten principles of good business process management", Business Process Management Journal, Vol. 20 Issue: 4, pp.530-548, https://doi.org/10.1108/BPMJ-06-2013-0074

[5] Jean-Philip Pritchard, Colin Armistead, (1999) "Business process management – lessons from European business", Business Process Management Journal, Vol. 5 Issue: 1, pp.10-35, https://doi.org/10.1108/14637159910249144

[6] Maqsood A. Sandhu, A. Gunasekaran, (2004) "Business process development in project-based industry: A case study", Business

Process Management Journal, Vol. 10 Issue: 6, pp.673-690, https://doi.org/10.1108/14637150410567875
[7] Mayara Segatto, Silvia Inês Dallavalle de Pádua, Dante Pinheiro Martinelli, (2013) "Business process management: a systemic approach?", Business Process Management Journal, Vol. 19 Issue: 4, pp.698-714, https://doi.org/10.1108/BPMJ-Jun-2012-0064
[8] Mohamed Zairi, (1997) "Business process management: a boundaryless approach to modern competitiveness", Business Process Management Journal, Vol. 3 Issue: 1, pp.64-80, https://doi.org/10.1108/14637159710161585
[9] Mohamed Zairi, David Sinclair, (1995) "Business process re-engineering and process management: a survey of current practice and future trends in integrated management", Management Decision, Vol. 33 Issue: 3, pp.3-16,
[10] https://doi.org/10.1108/0025174951008502
[11] N. R. Jennings, P. Faratin, M. J. Johnson, T. J. Norman, P. O'brien, and M. E. Wiegand AGENT-BASED BUSINESS PROCESS MANAGEMENT, International Journal of Cooperative Information Systems, June 1996, Vol. 05, No. 02n03 : pp. 105-130, https://doi.org/10.1142/S0218843096000051
[12] Qingyu Zhang, Mei Cao, (2002) "Business process reengineering for flexibility and innovation in manufacturing", Industrial Management & Data Systems, Vol. 102 Issue: 3, pp.146-152, https://doi.org/10.1108/02635570210421336
[13] R.G. Lee, B.G. Dale, (1998) "Business process management: a review and evaluation", Business Process Management Journal, Vol. 4 Issue: 3, pp.214-225,
[14] https://doi.org/10.1108/14637159810224322
[15] R.G. Lee, B.G. Dale, (1998) "Business process management: a review and evaluation", Business Process Management Journal, Vol. 4 Issue: 3, pp.214-225,
[16] Https://Doi.Org/10.1108/14637159810224322.
[17] Rashmi Jain, Anithashree Chandrasekaran, Angappa Gunasekaran, (2010) "Benchmarking the redesign of “business process reengineering” curriculum: A continuous process improvement (CPI)", Benchmarking: An International Journal, Vol. 17 Issue: 1, pp.77-94, https://doi.org/10.1108/14635771011022325
[18] Varun Grover, Seung Ryul Jeong, William J. Kettinger & James T.C. Teng The Implementation of Business Process Reengineering, Special Section: Toward a Theory of Business Process Change Management: 109-144 pp., https://doi.org/10.1080/07421222.1995.11518072