

REENGINEERING OF BUSINESS PROCESSES AT ENTERPRISES

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JEL classification: M21

Abstract

The purpose of this paper is targeted, systemic understanding of the need to introduce business processes reengineering at the most modern factories depending on the requirements of the environment, since business processes are, ultimately, the subjects of any innovations.

Tasks to be solved in the course of reengineering are characterized by a high degree of complexity and great responsibility. Successful reengineering cannot be implemented without a strong methodological basis. Well developed procedures and application of appropriate techniques and tools play the key role in the business process organization projects. It is important to increase the visibility of business processes and align them with multiple functions. Business processes reengineering has a strategic purpose to achieve watershed improvements in the indicators that will lead to high efficiency of enterprises, focusing on customer needs.

This paper outlines a range of possible measures for the implementation of business process reengineering that will enhance the consistency of procedures, techniques and tools to support management, its adaptation to minimize the cost and time.

Keywords: re-engineering, process, business process, management, efficiency

1. Introduction

The choice of control method is dictated by the requirements of the times - each epoch was characterized by its methods - and realized by the head of the firm based on his perceptions and beliefs.

Business reengineering, as well as many other methods of management, came to us from the West. In the mid-80s a widespread method of the revolutionary transformation of the company, and radical restructuring of its business, called „reengineering”, was developed and applied. Its ideologues - M. Hammer and J. Champy expressed the Essence of Reengineering in the following words: „This is the fundamental rethinking and radical redesign of business processes to achieve dramatic improvement in critical areas of their performance - price, service, quality, pace” [11]. One of the key concepts that underlie the re-engineering of business processes is their improvement as they are a huge reserve for increasing the efficiency of the enterprise. And for this

it is necessary to comprehend the nature of business processes, to understand what value they have for the enterprise, how to modify them correctly. Lack of attention to business processes, and the need to improve them demanded from the managers non-standard approaches. Gradually, re-engineering, which will allow the company to break the existing system and rebuild it on the basis of revolutionary changes in business processes, will turn into a management system, a „cluttered” technology, to stand on the basis of scientific justification. Relevant software products have been developed. The business reengineering has become a paramount process approach, where the object of control are the processes in the enterprise [22].

This article will consider the application of the methodology of business process reengineering, which, in our view, improves the consistency of procedures, methods and instrumentation support to management and its adaptation.

This requires the transition from task management to the management processes. In such an organization, the result of the work will be visible to each participant of the process as a „client” of the research results to determine the original and, therefore, the result is predetermined, based on customer expectations [10]. From the perspective of the process approach, the organization appears as a set of processes (with a functional approach - a set of functions). And management becomes the management processes now. Thus, each process has its purpose, which is a measure of its effectiveness - how well the process leads to its achievement.

The goal of all the processes are the goals of the lower level, which is achieved by implementing the goals of the upper level - the goals of the organization. The company achieves high efficiency of its operations by managing the processes and continuously improving them [22]. Consequently, the basic focus is on processes, since they permeate all elements of management and focus on building and managing the necessary processes.

2. Degree of problem investigation and research purpose, applied methods

Analyzing the degree of scientific development of the topic, it should be noted that the founders of the concept of reengineering are M. Hammer and J. Champy [11]. A number of their publications was followed by a wave of scientific contributions related to reengineering by T. H. Davenport [6, 7], G. Darnton, M. Robson [21], K. Flynn, and A. Chandler.

Certain aspects related to the problem of implementing innovations and reengineering into the management of a company are reflected in the works of the following scientists: V. I. Mayevskiy, A. V. Gugelev, V. I. Kushlin, V. M. Larin, Yu. V. Gusarov, N. S. Yashin etc.

Reengineering of business processes has been widely discussed in theoretical papers, textbooks and practical manuals, which, in spite of this, does not answer the question of how properly the reengineering project is implemented. And even if the project was designed by consultants, we must remember that, according to various estimates, the percentage of unsuccessful reengineering projects in Western companies is 70%. There are many examples that developed projects have not been implemented [31]. The reason for this, from our point of view is the rejection of other approaches to the management of the organization, and the formal implementation of the principles of reengineering.

The predecessor of the process approach was the functional approach. Now it is outdated and is a modern alternative to the process approach as a tool for reengineering. But the rejection of the functional approach requires the elimination of the concept of „function and, consequently, the „functional principle of creating an organizational structure”. Then build up only the process structure. It turns out that the distribution of specialists will occur on the basis of their belonging to the processes. The company, as a rule, is each participant of the multifunctional [25]. Consequently, it is the combination of functional and process approach to the management of a company, usually the „golden mean”. The functional structure of the company defines „what to do”, but the process – „how to do“. These are two integral aspects of management. If the manager, head of the company will be able to look at the organization from this point of view, reengineering will be a really useful and effective management tool for him [22].

The following research methods have been used for the study: historical and logical, systemic, functional and structural analysis, the method of sociological research.

3. Analysis and results

Business process reengineering is a comprehensive method that allows you to set strategic goals and objectives for a company by optimizing the performance of functions and operations of all departments. Therefore, its application is to optimize business processes in line with the strategy of the company, to ensure transparency for business owners and senior managers, to effectively manage operations, to make processes predictable, to formalize processes for subsequent automation.

Practical actions to manage and improve business processes by using business reengineering technology, which realizes the following possibilities [22; 20; 26; 29]:

1. Creation (design) of future business processes
2. Diagnostics of business process management
3. Change (adaptation) of business processes
4. Business Process Optimization
5. Documenting business processes.

1. Creation (design) of future business processes

For this purpose, a special language is used to describe business processes. This allows us to describe the current state of business processes, and create models of the future. The model includes a description of all components of the process - functions, resources, participants, goals, information, results, events, directions and sequence of actions - thus reflecting the current reality or an idea of it in the future. All actors perform their duties in accordance with this model. Each staff member clearly knows all his actions in all processes in which he participates [22]. When describing business processes, as a rule, the SPA method (Structured Process Analysis) is used [21]. The SPA method does not exclude the possibility of using the description of various schemes of algorithms; it replaces them with a leash at the highest level of detail in the development of maps of a complex process, which allows to detail processes to the level necessary for the

reengineering of business process [30]. Since the description of a multilevel structure (first describes the process at the macro level, at the enterprise level, and then proceeds to the description of a lower level with a higher degree of detail), it provides a systematic, structural interconnectivity. The actions of all departments and staff performing their duties in accordance with such a model should be adapted, coordinated and directed towards the overall process to achieve a system-wide result [22]. The systematic implementation of the business process requires the coordinated efforts of all the subjects of management, which confirms the words of the American scientist M. Mesarovich [17]: “The system needs to be designed as an integer, rather than start from the process and then just add the necessary control. There are examples in which the design process technology takes into account the presence of control sub-systems, but the system-wide approach, without separation, has not yet been implemented”.

The process management system is necessary for the formation of the structure of processes, that is, their organization in a certain interrelated form. Since each process is designed to produce a result, which is further used to obtain the following results at later stages and at higher levels, this structure should, ultimately, ensure the overall objectives of the company. It is then that process improvement is the most effective way to achieve [22]. In this case, today it is unlikely that many understand the urgency and need to maintain the integrity structured around an object, activity. The second point, which hinders the achievement of high performance analytics of business process management, is a multi-purpose, diverse direction and managerial issues. As a result, it seems to be a lack of “professional” integrity, both in the understanding of the analyst and the manager [18].

First of all, this is due to the standards that are used when describing the business process management to link schema of the current operating performance to that of the managers, analysts, etc. The organization is described as a set of structural units and positions, and not as a single “organism”, and is based on the fact that there is a possibility of applying the process approach. As a result, an incorrect statement of the problem description and inefficiency were used by the models themselves. In the best case, the simulation of the head is limited to a single function with multiple inputs and outputs that do not help overcome the difficulties in achieving integrity [19].

Creation (design) of business process involves the following: *development of an image of the future organization* and *development of the business model of the new organization* [4].

Developing the image of the organization. A promising way of developing an organization should be carried out using an integrated approach based on a combination of the process of strategy development and business requirements. The first stage includes clarification of the main goals of the organization based on its strategy, customer needs, the overall level of business in the industry and the current state of the organization. The purpose of this stage is to develop the idea of a new organization and formulate it in terms of defining the goals of the organization [4].

Developing the business models of the new organization. In recent years, a four-stage model building process, the redesigned processes or the development of “new” organization have been widely used. The four phases are as follows [4]:

1. Development of the external model of the future organization.
2. Development of an internal model of the future organization.

3. Creation of an information system to support future business processes.
4. Testing the redesigned business process on a small scale before implementing it.

Modeling of processes is carried out with the obligatory use of a modeling language. The modeling language should express how an internal or external process is implemented using human or technical resources, and from what functions these resources will be taken. It is particularly important to show how this process could be supported by the information system [4]. Information technologies now, in principle, perform a powerful “locomotive” of change, which sets in motion all the remaining divisions of the organization. Since the change of the business environment in the enterprise is facing not only new operational issues, but also new strategic development tasks that require new information and new quality, reflecting not only the state but also the very structure of the business. Information systems reflect the latest technical advances and expertise in the subject areas of management. The information system integrates all business units, automates many functions of collecting and processing information [19]. The main condition that needs to be fulfilled with the help of a new information system is the flexibility and ease of modification, allowing to track changes in business [30]. According to Popov (1996) [23], Robson (1997) [21], Subanova (2000) [26], Filinov (2001) [8], and Hammer (2000) [11], using information technology you can achieve various categories of changes which can improve not only the temporal characteristics of processes, but also reorganize the sequence of steps when performing operations in business processes, control the parameters of certain cases. Since information systems allow to unify and accelerate the diagnosis of business processes.

2. Diagnostics of business process management

Due to the clarity of the description, the process model (existing or designed) effectively analyzes how best it will lead to the goal. The analyzed factors can be the logistics process, its duration and **cost** (including their distribution by stages distribution). In other words, which may affect the performance efficiency. Data analyses allows you to change the process, constantly improving its quality [22].

The quantitative indicators of the processes demonstrate the effectiveness of their control at a certain stage of development of the organization. Resources are managed processes, and they also transform resources into finished products, which can quantitatively evaluate the effectiveness of the management processes. Quantitative process management indicators include: process complexity; causal relationships between processes, process control, resource consumption processes, the degree of process controllability [4].

Analysis of business processes is carried out in order to develop proposals for solving problem areas in organization processes.

As this is a “snapshot” of technological processes of productivity - a model of business processes “as is”, which allows the customer to get a comprehensive picture of what’s happening in the company. The analysis model identifies current problems of business processes: double subordination, duplication of functions, lack of data exchange between processes, inconsistency of processes. According to the analysis of the proposal, the directions of business processes change (adaptation) are put forward.

3. Change (adaptation) of business processes

Any changes to the business environment - the emergence of new activities, diversification, changes in the supply chain, technology - all require immediate transformation of the affected business processes. The existing model is adjusted, the changes are communicated to the performers, and they begin to act in accordance with the new conditions. Continuous adaptation of business processes to changing conditions is an effective mechanism for business management [22].

The introduction of changes is the most complex and critical phase of reengineering. To minimize the risks associated primarily with the resistance of the internal environment, detailed and consistent work with staff was carried out, staff at all levels was involved in the change process and motivated to achieve its results - to optimize the work and flexible organization. For this purpose it is necessary to check the compliance of staff with the new job responsibilities, to determine the need and quality of qualified personnel; employees to adapt to new work requirements and verify that all employees fulfill new rules work.

The result of this phase is not only the immediate implementation of all changes, but also the fact that employees are trained in a new style of work - dynamics, results, and, therefore, competitiveness. The company is entering a new level of work organization. The main result of the introduction of changes is that the company laid the reengineering mechanism - continuous change and adaptability to environmental conditions. The organization receives an additional competitive advantage in the market, the ability to optimize business processes in order to develop a new business model.

4. Business Process Optimization

In order to determine the reserves for improving organizational efficiency and optimizing business processes to monitor and analyze business processes it is necessary to eliminate the following factors: duplication of functions, "bottlenecks", excessive costs and availability of redundant operations, as well as their poor quality of performance, lack of coordination between the participants, etc. Optimization can be of two types - continuous improvement processes (evolutionary distances) and periodic radical change (Revolutionary Path). The first method is used in current activities when the company does not need major changes. The second method is used when the necessary changes are associated with a serious change in the order of activities, such as integrated automation. In such cases, the task is "start from scratch". This approach avoids the use of old processes in new technologies [22].

It is necessary to evaluate the existing business processes in order to assess their effectiveness. If you do not do this today, then in the future there may be significant costs associated with inefficient work of staff, breach of contractual obligations, the need for restructuring, etc. This entails considerable financial costs and loss of the company's image [24].

To see the bottlenecks in the activities and effectively manage the organization in order to link the performance of certain processes, it works with its strategic targets. Comparison of the strategic goals and objectives of the company should be with input and output processes. The dependence of the company's performance on the results of the process is revealed. In accordance with the

dependence on the selected indicators, it will impact the management. As a result, the organization at all levels is aimed at achieving results, and the owners and managers of the company have an objective mechanism for assessing the results of its operations and activities of the organization.

Further, the results of the analysis of business processes in the model are somehow modified to form a process model “as it should be”. During the optimization:

1. Elaborate proposals for the optimization of business processes (functions are redistributed among the participants, duplication of functions is avoided, informational gaps between the blocks are eliminated, workflow system between the structural units involved in each process is optimized);
2. Together with the employees of the customer, the company has developed a scheme of information flows to streamline business processes, and a list of incoming and outgoing structural information units: the type of outgoing documents, the recipient responsible for the implementation and approval of the document by officials, terms of delivery;
3. The regulatory scheme is carried out by the movement of documents, development (optimization) of the document flow (regulation) of the basic building block of each business process indicating the participants (including their responsibility), the timing and form of information transfer within each business process;
4. Gives recommendations on how to optimize the organizational structure of the customer company, taking into account the optimized management system (optimized business processes).

The result of the optimization is the models of business processes “as it should be“ taking into account their optimization and the update package (new documents) of internal regulatory documents (regulations of the departments, job descriptions, regulations of the execution process).

5. Documenting business processes

All actions and changes in the management of business processes need to be documented. Business process models created in the form of declarations are diagrams on paper and electronic media. All this together is a repository of business processes. Any necessary changes are reflected in the models so that the enterprise can always support the latest version of complex business processes. Similarly, we can plan future processes and save them as versions that are analyzed, tested and debugged, and only after that they become operational [22]. Planning organizational change includes analytical and forecasting activities, development of measures and selection of an appropriate strategy. Different levels of intervention in the old structure (individual, group, department, organization as a whole) should be taken into account, as well as numerous institutional settings, including the following [13]:

- the structure and processes (in recent years, more and more often in the direction of “smoothing” the hierarchy and a strict focus on the process of creating wealth in the “horizontal organization”);
- production and information technologies (for example, the introduction of the minimized production of resources);
- organizational culture as a model of fundamental values and principles shared by members of the organization (fundamental changes in them are extremely difficult);

- human resources, for example, through staff selection, development, incentive and motivation (with the “transformation” of behavior and attitudes), and HR management.

It is extremely important to distinguish between partial and radical changes. The first is based on the existing systems of values, structures and processes. During the partial transformation, the practical usefulness of the project prevails rather than the absolute achievement of the ideal (conceptual) state. Radical changes are necessary due to the rapid development of the surrounding market environment after a long phase of stability and long-term neglect of the necessary adaptation steps. Thus, the process of “revolutionary” changes to achieve advantages over competitors may be strategically desirable, but they met strong resistance from staff [13].

Consequently, the reengineering is the methods used in specific periods of organization’s development, when it is necessary to make a qualitative change in the organization in a radical way and with an articulated abrupt transition to a new status, missing up to this point of development.

Need to customize the management system may be due to:

- 1) feedback, ie the influence of results of the object control (in particular, the discrepancy between normative and actual parameters of the object);
- 2) the need to revise the objectives, practices and processes implemented by the management system;
- 3) the development of software, technological tools and innovative management methods [28].

4. Conclusion

In conclusion to this article, we can say that the singularity of business process reengineering management is as follows:

1. Reengineering helps to transfer the management of the organization with the functional principle to the principles of process organization, which are characterized by a process management structure, process teams, focused on task-specific business process.
2. Reengineering approach frees up additional resources (financial, human, technical, etc.) and invests them in basic processes.
3. Reengineering approach is focused on the growth of investment activity and creates the prerequisites for the growth of innovation activity. The focus of the process determines the peculiarity of reengineering: creation of new technologies, technical means of production and, as a result, spurring of innovation, and technological progress.

Application of business processes reengineering will improve the sequence of procedures, methods and tools to support management, its adaptation to minimize costs and time. In other words, controlling the process, we organize an effective interaction both internally and externally - with the outside world. Accordingly, this reduces operational costs (costs of poor interaction) internally (employees and divisions among themselves) and externally (the company with customers, suppliers, investors, etc.) [22].

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Rezumat

Scopul acestei lucrări este înțelegerea orientată și sistematică a necesității de a implementa reengineeringul (reingineria) proceselor de afaceri în cele mai moderne întreprinderi, în funcție de cerințele mediului, deoarece procesele de afaceri sunt, în cele din urmă, subiectele oricăror inovații.

Sarcinile care trebuie soluționate pe parcursul reengineeringului (reingineriei) se caracterizează printr-un nivel ridicat de complexitate și de responsabilitate înaltă. Reengineeringul (reingineria) de succes nu poate fi implementat fără o bază metodologică solidă. Procesele bine concepute și aplicarea metodologiilor și instrumentelor adecvate joacă un rol-cheie în proiectele de organizare a proceselor de afaceri. Este important să se sporească vizibilitatea proceselor de afaceri și să se alinieze la mai multe funcții. Reengineeringul (reingineria) proceselor de afaceri are un obiectiv strategic de a atinge un punct de referință în îmbunătățirea performanței, ceea ce va conduce la eficiența ridicată a întreprinderilor, concentrându-se pe necesitățile clienților.

Acest document descrie o serie de măsuri posibile pentru introducerea procesului de reengineering (reinginerie) a proceselor de afaceri, ceea ce va îmbunătăți coerența procedurilor, metodelor și instrumentelor pentru a sprijini managementul, precum și adaptarea acestuia cu scopul de a minimiza costurile și timpul.

Cuvinte-cheie: reinginerie, proces, proces de afaceri, management, eficiență

Аннотация

Целью данной работы является целенаправленное, системное понимание необходимости внедрения реинжиниринга бизнес-процессов на самых современных предприятиях в зависимости от требований среды, поскольку именно бизнес-процессы являются, в конечном счете, субъектами любых инноваций.

Задачи, которые должны быть решены в ходе реинжиниринга, характеризуются высокой степенью сложности и большой ответственностью. Успешный реинжиниринг не может быть реализован без прочной методологической базы. Хорошо разработанные процедуры и применение соответствующих методик и инструментов играют ключевую роль в проектах организации бизнес-процессов. Важно повысить наглядность бизнес-процессов и согласовать их с несколькими функциями. Реинжиниринг бизнес-процессов имеет стратегическую цель для достижения водораздела в улучшении показателей, которые приведут к высокой эффективности предприятий, ориентируясь на потребности клиентов.

В этом документе описывается ряд возможных мер по внедрению реинжиниринга бизнес-процессов, которые позволят повысить согласованность процедур, методов и средств поддержки управления, его адаптацию для минимизации затрат и времени.

Ключевые слова: реинжиниринг, процесс, бизнес-процесс, управление, эффективность

Received 15.08.2018

Accepted 06.12.2018

Published 28.12.2018