

## THE COMPLEMENTARINESS OF THE BUSINESS PROCESS REENGINEERING AND ACTIVITY-BASED MANAGEMENT

Associate Professor, Ph.D Violeta DOMANOVIĆ,  
Associate Professor, Ph.D. Vesna STOJANOVIĆ-ALEKSIĆ

University of Kragujevac, Faculty of Economics  
vterzic@kg.ac.rs

**Abstract:** In order to sustain long term growth and development, an enterprise has to envisage and implement contemporary management innovations altogether. In transition economies, like Serbia is, it is of great importance to redesign business processes and activities, to analyse activity profitability in order to select value-added activities and reduce non-value added ones. This paper considers the possibility for complementary implementation of the business process reengineering and activity based management in the process of long term efficiency improvement. Namely, the basic postulate of business process reengineering concept might be established in the process of activity based management implementation and conversely.

**Key words:** business process reengineering, activity based management, enterprise, efficiency.

**JEL Classification:** M21, L53

### 1. INTRODUCTION

The fact is that modern enterprises face with very intensive changes in all environment segments, starting from scientific and technological from market and economic, to demographic and political ones. As the reaction on these changes in managerial and organizational science and practice it is developed numerous theories and concepts, among which dominate transformational theories in latest years, thus those that deal with more radical organizational changes.

In modern business environment, cost management has become a critical factor of the enterprise success. The globalization process has brought with itself bigger pressure of competition. The competition effects on enterprise functioning are remarkable, and those enterprises that do not react successfully may fail or become a takeover target. Nowadays, simply cost reduction is not enough; instead, costs must be managed strategically. Strategic cost management implies the application of such cost management techniques, which simultaneously improve strategic position of such an enterprise and reduce the cost level. The changes in industrial business environment caused the changes in cost structure as well.

As the results of the technological and other changes is decrease in share of the direct labour cost in total production costs. In many industries, the material and component costs take more and more share in total production costs. Automation and decrease of the equipment life cycle caused that capital equipment costs take more share in total costs and must be reproduced in much shorter time period. The information technology costs and other overheads also increased in total costs. The phases in product life cycle must be managed effectively and efficiently. Business dynamism and urge for the fast making decision means that efficient computerized

information system should provide relevant and timely information. All this makes an additional pressure on profit rate high.

In order to survive and develop in long term, a company is forced to diversify the assortment so that products and services consume different amount of indirect resources. In such circumstances, thus, too simplified system of the overhead allocation probably will generate inaccurate information and result in inadequate price and management decisions. This is from reason that traditional cost accounting (1) is designed so that shows total product costs, but not particular product features in different activities; (2) uses the common cost driver whether for an enterprise or a section of a factory and ignores the differences in activities for different products or production cycles in section of a factory or sector; (3) takes into account the common volume of the activity for all operations as direct labour hours are as the basis for the overhead allocation on all products while selected activity takes marginally share in total production activities and (4) accentuates the long term product analysis. This caused that many managers did not calculate the real profitability of their products or the best product mix because they did not know which resources and activities their products consume.

There are rarely management concepts which do experience enormous medium and business support so quickly, as the business process reengineering is. The phenomenon of reengineering came in all business lexicon and encyclopaedias, whether through the term of the business process reengineering, or synonym like business process redesign, core process redesign, business process transformation or simply reengineering are [3, str.27].

The term business process redesign is for the first time used on Massachusetts Institute of Technology, within the research program "Management in 1990's", which is implemented from 1984 to 1989. Within this program, it is born the idea about creative use of the information technology in aim of the redesigning and transforming the organization business and increasing its efficiency and effectiveness, what is actually presented the inception of the reengineering concept. As a new managerial technique and philosophy, based on process orientation, which is advocated for radical re-examining and redesigning all business segments, reengineering is, according to the many authors' opinion, got primacy of the most important managerial concepts in 1990s.

## 2. THE REENGINEERING CONCEPT CORE

The core of the reengineering concept and one of its most important characteristics is adopting the process-oriented approach to business. It means that reengineering in the middle of its interests and investigations put the business processes, with envisaging the possibilities for their redesigning and improving. Business processes, as the set of the activities that create the value for customers, are of the essential significance for the enterprise functioning. Since the value creation is the basic point of the functioning and the condition for each enterprise' survival, it is of special importance that such processes function much better.

Adopting the process orientation, the reengineering concept is directed, practically, on abandoning traditional principles of high specialization, hierarchy and functional activities grouping and transition on system of integrating the particular operations into connected business processes that teams manage. It is important, thus, to recognise the differences among processes and business functions. A process may be realised as the set of the activities by which it is, through transformation of inputs into outputs, created the value for consumers.

In most number of enterprises, the processes are fragmented through particular functional areas – research and development, marketing, planning, production, finance and similar. There are experts of specified profiles working in these functions, so that each of them is engaged on some of the processes, but working only a part of total task. Since the functional areas are very

often closed in own frameworks and that the tasks performed inside are just the segments of total activities in process, the employees in particular departments often do not have a feeling that they work on common project, what results in hard communication, lack of control, time and decreased effectiveness and efficiency. Negative characteristics of the traditional organization are reflected in the following:

- Process are fragmented, divided through divisions or organizational entities;
- Business activities are unknown for the participants because none has a perspective of the whole process;
- They are not managed uniquely because, conditionally speaking, none is responsible for the result and implementing the process from the beginning to the end. [5, p. 37].

The reengineering concept is based on concentration of organizational activities that is on integration of partial activities into connected processes, which will teams lead and supervise. It is considered that experts from different profiles should do together in mixed teams in all phases of the process, whenever it is possible. Since that in that way each member of the team has the visage of the whole process, he becomes a conscious of his role and strive that his part of the job perform so well that later on there is no correction, accommodation and slowdown. In such organized processes the communication system is significantly improved, so that errors in communication that exist among traditional functions are reduced to the least level, and total efficiency and effectiveness increase at higher level. In figure 1, it is shown how an organization transits from classic functional into process, so called "triangle organization".

Certainly, beside the process orientation there are others, equally significant characteristics of the reengineering, like: re-examining all rules, procedures, aims and strategies of the organization, redesigning the way of performing existing activities and creative use of the information technology, which represent a remarkable significant driving force of the reengineering.

Most of these characteristics are never in question. However, much controversies caused original insisting on reengineering implementation as a technique of the "clean paper list", that is completely neglecting the existing state of affairs and starting from the scratch. It should be said that in initial phases of the reengineering development it was really accentuated the concept radicalism and many proponents of this concept fanatically defended the idea of fundamental change and destroying all that exist in the organization. Once upon a time, it was clear that this reengineering characteristic is often misinterpreted and that changes do not mean totally refusing of all established values and prerequisites but, above all, critical re-examining of the existing situation and seeking for the response on the core issues, which refer to the organization business. The existing state of affairs must not be a limit for finding new possibilities, but it does not mean that it should be refused everything during the new processes and structure creation, as well as that what was valuable in old system.

When it is said "sea change" we should bear in mind the radical changes of the attitudes about organization structure, hierarchy, control, the way of units grouping, position of the employee in organization, and above all, on change of the process treatment in enterprise. One of the biggest contributions of the reengineering as a concept lay just in stimulating the moving from the old way of thinking toward new realisation of the organization, where the accent is moved from the structure on processes.

### **3. THE BASIC POSTULATES OF THE ACTIVITY-BASED MANAGEMENT**

In 1980s there was a real revolution in cost management practice. Firstly, there was appeared the concept of activity-based costing as a substitution for traditional standard costing

systems, which in their base stayed unchanged at the end of the last and in beginning of the new century. Such a costing system is used for developing the activity-based management system. Secondly, activity-based management – operating improvements and strategic action undertaken on basis of activity-based costing – is integrated with other cost management techniques, like kaizen costing and target costing, and all of this in aim of finding new ways of cost reduction as well in the chain value as in product life cycle.

The activities along the whole chain of the organization processes which add value have a significant effect on costs and thus profit. Recently developed approach of the management accounting in aim of the evaluating this impact and envisaging core cost drivers is activity-based costing. Activity based costing offers an alternative approach to product costing as a response on critics of the traditional costing systems.

If a company produces just one product then all overheads may be allocated on that product. Particular products are then average costs. The difficulties in the overhead allocation appear when a company produce more products using more different resources which are spent in different proportion in the process of particular products making.

Traditional approaches to the cost allocation allocate the overheads, for instance on basis of the direct labour hours or produced units. Hence, they are led by volume of the business activities, based on scientific management of the massive production with standard design, high percent of the labour cost in total costs, high volume, low fixed costs and with the demand bigger than supply. All of this led to the competitive advantage on the base of cost leadership.

The activity based costing starts with the consideration of the different activity groups that lead to the overhead increase instead of production volume: mobility, production demands, quality and design. This costing system is based on premise that activities consume resources, and that products consume activities. There is a need to identify how labour and resources are actually used and it is possible to do by interviews, questionnaire, observation and process activities mapping.

Since here is a word about the activity based costing system, it is logical at first to become familiar with the some significant terms: activity, resources, cost driver, resource consumption cost driver and activity consumption cost driver. [2, 135]

*Activity* is a specific action or work that is to be performed. It may be one action or set of several actions. Resource is the economic element which is necessary or is consumed during the production activities realisation. Cost driver is the factor which causes or is referred on changes in costs of an activity. Since the cost drivers cause or are referred on cost changes, measured or quantified cost drivers amount are excellent base for resources cost allocation on activities and costs of one or more activities on other activities or cost objects. Cost driver is either resource consumption driver or activity consumption driver.

Resource consumption driver is the measure of the resource quantity which one activity consumes. This driver is applied for the resource cost allocation on the specified activity. The examples are number of the items in supply or sale orders, changes in product design, the size of the factory and machine hours. Activity consumption driver measures the activity quantity which is performed for one cost object. It is used for the cost allocation of the activity group on the cost objects. The examples of these cost drivers are the number of the machine hours in the production of the product A, the number of series in the production of the product B.

The concept of the activity-based costing divides the total overheads on variable and fixed, so that variable costs are divided into short term and long term. In the activity based costing system, it is supposed that fixed costs do not depend on any measures of the business activities volume for the specified time period. Short term variable costs – costs based on the volume – are defined in the same way like traditional variable costs – material and labour costs. Long term variable costs – activity based costs – are defined like those costs that vary with the activity

volume. The examples of these costs are the setup costs and entrance of commodity, which depend on the number of the production cycles and customers orders, respectively.

The activity based management system uses information based on the activities and focuses on efficiency and effectiveness of the business processes and activities, and that implies cost reduction, cost modelling and customer profitability analysis. Identifying resources which are consumed on customers, products and activities, activity based management direct management focus on critical factors of the success and increase the enterprise competitive advantage. This system is consisted of the four key processes: profitability analysis, activity based costing; product activity based costing and activity performance measurement and management. One good activity based management system should promote more efficient cross-sectional management.

Activity based management refers to the set of actions that are to be performed, on better information base, information about activity based costs. With activity based management, the organization realizes desired outputs with less demands of the organization resources, i.e. organization realizes the same results (for example, revenue) at lower total costs (less consumption of the organization resources). Activity based management realizes this through two complementary application called operating and strategic activity based management.

Operating activity based management increases the efficiency and use of the asset and reduces costs; focuses on right doing things and more efficient doing the activities. Operating activity based management uses management techniques like activity management, business process reengineering, and total quality management and performance measurement.

Strategic activity based management attempts to change the demand for the activities and increase profitability by more efficient performing activities. Strategic activity based management focuses on the choice of the specified activities for the business. By strategic activity based management, an enterprise improves the profitability reducing the unprofitable activities, eliminating unnecessary activities and selecting the most profitable customers. Strategic activity based management applies the management techniques like process design, production line and customer mix, suppliers relationships, customers relationships (price, order size, delivery, packing etc.)

#### **4. ACTIVITY-BASED MANAGEMENT AND BUSINESS PROCESS RE-ENGINEERING**

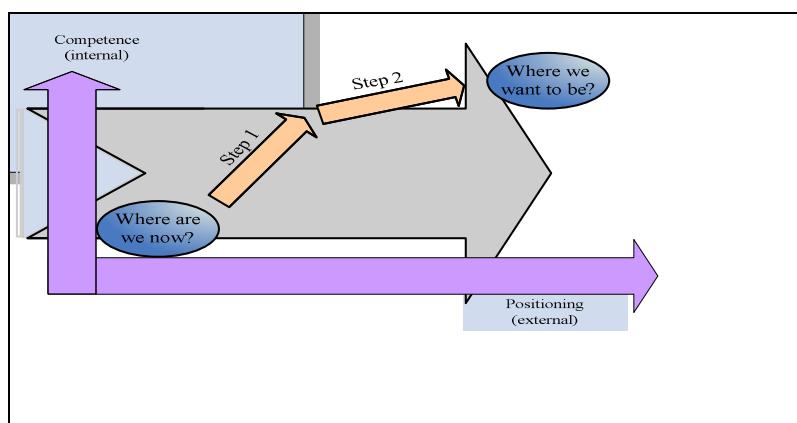
*Business Process Re-engineering* or *Business Process Management* is the techniques that substituted less popular concept of the total quality management and *Benchmarking*. As it has already said in the first part of the paper, the business process is any series of the steps, which are followed in order to perform some task in business. While *TQM* analyzed in details all those what stand behind the customer needs involving all employees in implementing the tools and techniques of the continual improvement, *BRR* exposed one more radical approach. While TQM accentuates the team approach involving the people which work directly in the processes, it is more probable that these same people impose business process reengineering, with that in the business external consultants are to be engaged. If it is not radical, then it was not reengineering. Instead that the existing system improves in series of the incremental improvements, the business process is completely redesigned in order to eliminate unnecessary steps, decrease the possibilities for the mistakes and reduce costs.

*BPR* is closely connected with the concept of the lean enterprise. Such an enterprise may be created from the scratch or through transformation of the existing enterprises. The decision may be made only when the chain value becomes the subject of the reengineering. Business process reengineering focuses on the simplification and elimination of the unnecessary effort. The central idea is that all activities that do not add value to the product or service are to be eliminated.

The activities that do not add value to the product or service that customers are willing to pay are known as the activities that do not add value. Moving big series in the course of the production from one work station to the second one is the example of the activity that does not add value and may be eliminated by redesigning the factory interior.

The starting point of the reengineering is not “how we can do something faster or cheaper or better” but “why we do something at all? Is it because of demand satisfaction or internal organization?” Shortly, reengineering is not incremental process (little by little) – it is everything or nothing. Lean enterprises attempt to organize the work through business processes, but not on functional base with the traditional accent on the specialization and division of labour.

If we start from the definition of the business process as a collection of the activities that take inputs and create outputs, which are of value for the customers, it is clear that there is a relationship between the concepts of activity based management and business process reengineering. On the one side of the scale, reengineering may be considered as an extension of the total quality management, but with the increased cross-sectional process perspective. In this case, employees would be still involved in seeking for the improvement possibilities, but with the special reference to the influence which would any changes have on the whole process. On the other side of the scale, the beginning with the clear list of paper and work design from the scratch offer the possibility to be radical and innovative.



**Figure 1. Two steps on the way toward business process reengineering**

Source: Plowman, B., (2001), *Activity-Based Management: Improving Processes and Profitability*, Abingdon, Oxon, Gower Publishing Limited, p. 108.

*Step 1.* This step implies the observation of the current processes in order to decrease unit costs and improve services that are offered to the existing customers. This step generally starts with the analysis of the customers needs so that it could be possible to identify the differences in services in comparison with the competitors. This is an action on the axis positioning. However, there is a danger that the enterprise will attempt to increase the services to all customers. Activity based management offers the significant information in this phase analyzing the customer profitability. Since it is made the customers selection with which the enterprise will cooperate in future, then just those processes that refer to the selected customers will be the subject of the reengineering so the service level could be increased. Without that knowledge of particular customers profitability, offering the better services and unprofitable customers make a risk of the attracting more such customers.

On the axis competence, reengineering initiative will start with the collecting data about the activity that are undertaken, and then it is defined through attributes the processes and activity types which are of core significance for adding the value and those activities that discourage the employees from the core job because the process is failed. These data give the base for developing the ideas for the process improvement.

If the data about activities are collected in purpose of the reengineering processes, it is not big undertaking to allocate the activities on products and services that company offer, as well as on the customers that serve. Profitability and customer analysis is just on the step further from the reengineering project. In the same way, if the data about the activities for one model of the activity based management included the same attributes, then the enterprise is also on the step further from the implementation of these activities data as the base for the business process reengineering. Implementing both these concepts, there are realized the bigger benefits (synergetic effect), than the sum of the individual benefits of the both approaches is.

*Step 2.* In the second step, it is taken the different business perspective. In the activity based management concept, the costs are categorized into infrastructure, maintaining, internal services and frontal line. While the step 1 is concentrated on the today's business, increasing the efficiency of the current frontal activities and processes, the step 2 is the vital maintenance activity, in sense that it looks long term on design of future business. The step 2 is the key role for the higher team, whose task is to devote the issues that will lead enterprise to the position of the world class with the capability of the world class. Before the reengineering process, step 2 redesigns the business as a whole so the new position on the market could be fortified.

Building the new business on the basis of the activity based management is the key for the retaining the focus on the profit drivers and all sub processes which should fortify how it could be realized the real profit from the right products and services which are offered to the profitable customers.

Business process reengineering requires from the management accountants to be more flexible and to work in teams with the non-accountants. The accounting job is diversified and non-accountants may do it too. Non-financial performance measures are more significant. The accent is on eliminating overheads not on their measurement or allocation. Organization structures/departments/budgets are less significant that process.

Process analysis and costing may be used for the identification the areas that would have benefits from the improvements, as well as activity based management. Activity management may be combined with the benchmarking so that it could be provided one systematic approach to the activity identification with the biggest area for the improvement.

Activity based management provides different interpretation of the real activity based costing influence. Starting from the moderate aim of the improving the accuracy of the absorption system with one base, the activity based management project expanded into translating the indirect costs into direct ones. Besides, this project introduced a new agenda of "productive employees" so that staff activities are to be connected with the products. [1, 99-120].

The critics of the activity based management think that an attempt to count the staff functions bear the risk of losing the core of those functions. Although some staff functions may be counted and routine, team work and customer relationships may be damaged because they are difficult to measure. The staff may be connected with the available, countable cost drivers so that activity volume may be founded. There is a danger that activity performance will have a priority over the original purpose. Activity based management and business process reengineering may lead to the elimination of the subroutine staff activities even if they create the value for the enterprise.

## 5. CONCLUSION

The implementation of the reengineering in enterprise is primarily directed on redesigning business processes, in order to make them more efficient, effective and flexible. Its implementation, however, has multiple effects on all dimensions of the organization architecture. Namely, the nature of the business process determines the way of doing things, as the way the people who perform those jobs will be grouped and organized. Thus, the fragmented processes in

traditional enterprises will cause close specialized jobs and organization structure based on functional departments, while integrated processes will cause multidimensional jobs which are the best performed with help of the process teams. This leads do the change of the management system, the way of making up decisions, authority distribution, controlling way, rewarding system, and system of value, beliefs and attitudes of the employees, i.e. organization culture. Because its implementation leads to the extensive changes of all segments of the organization, business process reengineering may be considered with full right as one of the transformational concepts. However, it is not one of the programs or techniques for the business upgrading – reengineering is also a specific business philosophy which impels open, more flexible the way of thinking, directed on different relationship toward changes, which must not be realized as the threats, but as a chance, possibility and challenge. Thus, no matter if the enterprises will decide upon undertaking the reengineering program or not, it is certainly useful as a concept that points to the significance and role of the business processes and necessity to devote much more attention to the its design and the way of functioning. This is especially important for the enterprises which are faced with the need of overcoming the traditional way of work and management, and creating more flexible relationships as well as inside of the organization so with the environment.

Business process reengineering may be compared with the other management innovations like activity based management. Namely, the basic postulate of these concepts might be established in the process of activity based management implementation and conversely. Complementary observed, these management innovations significantly contribute to the upgrading total enterprise efficiency through total costs reduction, more fairly allocation of the overheads, decrease of the unused capacity, increase of the business activity volume, decrease of the production cycle, increase of the sale volume by right customer relationship management, and all to the increase of the profit margin.

## REFERENCES

1. Armstrong, (2002), "The Costs of Activity-Based Management", Accounting, Organizations and Society, 27 (1/2).
2. Blocher, J. E., Chen, H. Kung, Cokins, G., and T. W. Lin, (2005), *Cost Management: A Strategic Emphasis*, McGraw-Hill Companies, Inc.
3. Burke G., Peppard J., (1998), *Business Process Reengineering*, Kogan Page, London.
4. Hammer M, Champy J., (1993), *Reengineering the Corporation: a Manifesto for Business Revolution*, Nicholas Brealey, London.
5. Hammer M., (1996), *Re-engineering, the Mistakes and Misunderstandings*, World Link, January-February.
6. Manganelli R., Klein M., (1996), *Reengineering Handbook*, Amacom, New York.
7. Omachonu V., (1996), *Principles of Total Quality*, Kogan Page, London.
8. Peppard J., Fitzgerald D., (1997), *The Transfer of Culturally Grounded Management Technologies, the Case of Business Reengineering in Germany*, European Management Journal, Vol. 15, No 4, August.
9. Plowman, B., (2001), *Activity-Based Management: Improving Processes and Profitability*, Abingdon, Oxon, Gower Publishing Limited.