The modern concept of business engineering

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The primary purpose of business engineering is an efficient application of intellectual capital, labor, and other resources, which can be achieved through innovations, creation and implementation of new technologies. However, it should be remembered that desire itself is not sufficient to implement business engineering. High degree of motivation, good leadership, two-way communication, and participative decision making in addition to high commitment to accomplishments are the prerequisites that have to be fulfilled.

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High technological management attributable to modern age has been refining and developing over the years: it has prepared a foundation for business engineering as a separate aspect of company management. In the eighties of the previous century a revolutionary and radical method of enterprise activity and business transformation widely spread in Japan, with the following of America and Europe later on. This method was called reengineering. Development of “business processes” is related to reengineering, the improvement of which enables the enhancement of production efficiency. Owing to such advantages offered by business engineering and great results achieved as the result of implementing it, the present paper aims to take a closer look at the concept of business engineering and to understand the particularities of it.

Reengineering as a method of business reorganization and transformation of existing business processes has gradually developed into the concept of business engineering. The newly developed concept of business engineering refers to the system of establishing business as an engineering science in addition to meaning the designing and managing of business processes in a new and innovative way. Furthermore, it represents defined technologies and rules for project optimization and systemic management of a business. In case of business processes being the main objects of management in establishment, the defining factor is the approach, which can take either process or project form. The main components of business engineering represent a unity of functional, organizational, technological, informational, and other means. As an integrated system it defines: a) goals and directions of business development; b) business processes and technologies; c) business structure, and d) information and resources necessary for business.

This method of management is tightly connected with formalized description and modeling of business processes that also represents a part of it and covers elaborating of various business models of activity as inseparable part of management (strategy, primary, auxiliary, and management processes, organizational structure, resources, system of evaluating processes, etc.). Managers, who would like to use it, should start with radical transformation of their own views and thinking that is not an easy task. It is quite difficult to change saturated, hardened, and deposited conscience, views, and beliefs. Only innovative managers, who constantly search for novelties for the perfection of their management style, are able to do this.
What are implied by business engineering and process management approach? It is widely known that functional approach has dominated up to now. It was thought that a firm was some mechanism consisting of a set of functions. These functions are allocated to sub-departments, where they are accomplished by the employees based on their specialization. According to the principle of labor distribution elaborated by Adam Smith, accomplishment of functions in accordance with the complication of production is divided into greater number of operations. While performing narrowly specialized tasks employees cannot see the results of their activity and do not understand their role in the chain of activities. Such system obliges personnel to perform their functions well, but is not oriented towards achieving the final result. However, this common high efficiency is a measure of business success. In majority of cases activities of an enterprise is not limited to the boundaries of one sub-department only. Departments hand over the work gradually and these interrelations are very time consuming compared to the time spent on the work itself. The reason for this is low degree of interest in effective cooperation with another sub-department. In its turn, this results in common interests being forgotten at the end and interests of one sub-department taking the precedence over that of another. Therefore, conflict of interests is a huge problem that may arise under functional nature of labor.

Distinct form a functional approach, process approach focuses on procedural aspects of the activity rather than the activity itself. Therefore, organization is a set of processes (functional approach - a set of functions) and the management of a company can be viewed as management of processes. Hence, proper attention should be paid to the ongoing processes of the organization. Employees of sub-departments and services involved in these processes are oriented towards final result. As every process is managed and built in a way that is consistent by the company requirements, there is certain objective to be achieved under every process. Every process presumes the sub-level goals, the achievement of which is followed by higher level goals that are also subject for completion. Managing processes and maintaining effectiveness in those processes lead to the overall effectiveness of the firm in addition to resulting in organizational goals being achieved.

In past functional and process approaches contradicted each other. In line with these approaches, business engineering has evolved. Compared with the mentioned approaches, function and organizational structure “are not lost” in business engineering approach, as employees are still grouped by their professional specialization. However, they participate in different processes and their roles are defined in every process. Rational use of organization’s resources determines how many roles can be undertaken by employees participating in the process. Combination of functional and process approaches is a “golden mean” for the management of a company. As functional structure of a company defines “what to do” and process approach “how to do it”, these two approaches are inseparable part of management. If the management of a company views the organization in that way, then business engineering will become the most effective and useful instrument of management.

Every firm producing goods or providing services may be viewed as a system of activity. These systems manufacture products or provide services by consuming resources. This chain of activity is a set of processes. Particular actions are taken within the framework that enables the achievement of better results or organizational goals. In this case content and shape of production processes are defined by the company goal.

It may be assumed that functional organization is characterized by static elements, such as functions, organizational structure, and regulations, while process organization can be viewed as dynamic. Despite such differences in nature, a
particular task is completed within the frames of a process by employees of different functional sub-departments. This relationship between functional and process approaches is defined by normative documents such as service procedures, sub-departmental regulations, managerial instructions, and by other documents. While functional content and distribution of functions among sub-departments and employees are provided for in the normative documents, sequence of activity of particular employees is defined in accordance with accomplishment of functional duties by these employees in the process approach.

Every action towards management and improvement of business processes is taken through the instruments of business engineering that define: a) construction of business processes; b) change of business processes; c) analysis of business processes; d) optimization of business processes, and e) description of business processes.

Special formal and graphic languages are used for the description of business processes that enable to illustrate existing processes in addition to creating a future model. The illustration demonstrates the description of every element - aims, results, roles, functions, structure, resources, participation, information, events, and interrelations, in accordance with the chain of actions. Thus, it describes existing reality or a future view. Every participant of the process accomplishes functional duties in accordance with this model. Every employee exactly knows his/her action in the frame of the processes, in which he/she is involved. The description consists of multilevel hierarchical structure: first - macro level description and then sub-levels - with much higher degree of detailed elaboration. This ensures the systematization of structural interdependencies. In accordance with the production model, activities of employees and sub-departments are coordinated and directed towards achievement of common result.

Any change in business environment whether it is a new direction of activity, expansion of a product line, changes in business support system, or technical and technological update, requires immediate transformation of business processes. Modifications are introduced to the existing model and direct changes are made to the level of performers that will function in accordance with new conditions. Constant modification of business processes to the changing environment is a warrant of effective business management.

Model of a business process, whether it is an existing or designed model, enables effective analysis to be made by considering all aspects in the process. Process logistics, its duration, and value are one of the factors defining effective performance that should be analyzed. Conclusions drawn from analysis enable to change the process and ensure high quality throughout the process.

The organization obtains more reserves for enhancing efficiency by conducting frequent monitoring, constant analysis of business processes and by optimizing the activity afterwards. As the result of monitoring activities, undesirable factors such as duplicated functions, excessive valuing of some operations, low quality of performed operations, and incompatibility of the participants’ activities can be revealed and avoided. Optimization can be of two types: constant improvement of processes (evolution way) and periodic radical change (revolution way). The first type is used in the processes of ongoing activities, when the organization has no need for radical changes or lacks corresponding resources as such. The second type is employed when transformation is necessary with regards to essential change in the sequence of activities. In this case, the idea is “to start everything over” and this approach enables to avoid new technologies towards old processes.

In the business process management any action and change should be documented. Business process models have descriptive nature making it possible to present them on paper or electronic carriers in the form of diagrams. Any change should be reflected in models so that future processes are planned and
Discussion on the significance of paying attention to business processes has led to the definition of its content: process is an interdependent chain of activities (works, operations), which is aimed at achieving added high consumer value. Word order “chain of work performance” shows that it is crucial to establish order and comply with the regulations.

Processes focus on consumers and shape orientation of the whole organization. This implies that the value of performed work, provided service is assessed not by a performer, but by a consumer. At the same time whether a consumer is an internal or external (neighboring department) affects the evaluation of the work. Otherwise, employees would not be concerned about how far a consumer is satisfied. In other words, in the process management effective communication both inside the firm and with external world is ensured. Correspondingly, this enables to decrease transactional costs, both internal (among employees and sub-departments) and external (among firms, buyers, suppliers, investors, and others) costs.

There is a full and standard list of processes and the number of these processes depends on the needs of a particular type of activity. The main groups of processes are allocated into managerial, main, and auxiliary types. The result of main processes is creation of added value and they have a cross functional character as communication with clients and suppliers is managed within their frames. Establishment of business infrastructure is considered as auxiliary process: informational, administrative, material, and other support in addition to processes of elaborating products and services. Management processes are: planning, recording, analyzing, quality system, and perfection of process. Existing tendency of process development - their “transformation” beyond the firm’s borders means establishment of organization with cross and electronic commerce processes. Establishment of cross organizational processes and optimization are directed towards reduction of external transactional costs. For the establishment of process management system it is necessary to create a process structure, where they will be built with the interrelated sequence. Every process is aimed at achieving some result, which is used at the higher levels for the achievement of further results. Thus, at the end, the mentioned structure should ensure achievement of the company’s common aims. With such a form of process structure a tree of company objectives is created. At the same time, organization’s strategic map should be created. Arrangement of proper interrelation between the company’s structures indicates once again that it is impossible to conduct effective work only in separate field of activity. This means that effective management system is not established. In this situation, process perfection is especially effective remedy for the achievement of goals. It is recommended to use reengineering of business processes only in case if production requires a sharp improvement through replacement of old methods by new management. It is assumed that it is reasonable to separate three types of companies, for which reengineering is necessary and reasonable:

a) Companies, which are at the edge of decomposition due to high prices of product and low quality compared to rivals. If these companies do not take decisive measures, they will be bankrupt;

b) Companies that are not experiencing difficulties at present, but entrance of new competitors, changes in consumer demands, or economic environment are not inevitable, and

c) Companies, which do not experience any problems in the current period and do not expect anything in the future. They are leader companies, which lead
aggressive marketing policy; they are not satisfied with the current good condition and want to achieve more through engineering.

Business engineering is related to many sciences. This interconnection indicates that it is an interdisciplinary phenomenon. In order to achieve high results it is necessary to ensure tight interconnection among exact sciences and natural sciences.

Drawing conclusion about business engineering, it can be said that main aim of it is efficient application of intellectual capital, labor, and other resources, which can be achieved through innovations, creation of new technologies, and their implementation. However, it should be remembered that desire itself is not sufficient to implement business engineering. High degree of motivation, good leadership, two-way communication, and participative decision making in addition to high commitment to accomplishments are the prerequisites that have to be fulfilled.