

## Modern trends in the management system formation of enterprise competitiveness

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**Abstract.** Management technologies represent a set of management tools and techniques to achieve organization goals, including methods and tools for collecting and processing information, techniques of effective impact on employees, management principles and laws, as well as control systems. Management Technology has two distinct meanings: as science (management section), which studies the algorithms of information processing and decision-making undertaken by personnel with the help of technical aids; as technology, which is a targeted sequence of management operations, which result is an adopted and implemented solution.

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### Introduction

Control Technology is an integrated set of technical tools (data collection and recording, transmission, input, storage, processing, output, display and reproduction of information), designed for the mechanization and automation of the information processes in the production management system in order to develop rational decisions.

### The main part

Having considered the options of the enterprise management systems, consisting of features and elements, it can be concluded that the process of management system reforming or improving is possible through:

1) changing the characteristics of the control system (objectives, functions, principles);

2) changing the control elements (here the elements will be understood as the simplest indivisible elements and subsystems and components) [1].

Meanwhile, there are possible both ways, simultaneous changing the enterprise management system elements at functional different levels and the characteristics of this system, as well as changing phased changing.

It can be argued that during the process of social evolution, respectively evolve models of economic systems prevalent in society. With the development of information technology, as a result of new developments in science and technology, respectively develop approaches and methods of enterprise operation in general and their management systems in particular [2].

As it has been already noted, the reform or improvement of enterprise management system is possible due to changes in its characteristics or due to qualitative and quantitative modification of management system elements. We believe that it is

now possible to allocate the following perspective directions and trends in management and accordingly in the organization and operation of enterprise management systems:

1. Automation and optimization of management systems.
2. Introduction of a benchmarking system.
3. Introduction of outsourcing.
4. Business Process Reengineering.
5. Introduction of a controlling system.
6. Introduction of the Total Quality Management subsystem (TQM) based on the ISO standards.
7. Creating self-organizing management systems.

Let us consider these promising directions in more details.

Automation and optimization of management systems. With the advent of computer technology, the issue of enterprise management systems automation becomes increasingly topical. Automated enterprise management system is a management system built on the basis of computer technology, economic and mathematical methods, and information technologies application [3].

We should pay attention to organizational support, which consists of a set of rules, instructions, regulations and other documents regulating functioning of automated management systems. Currently, there have been developed international standards for automated management systems based on this organizational support (MPS, MRP, MRP II, ERP, CSRP) [4].

Benchmarking is the process of identifying, understanding and adapting existing examples of company effective operation in order to improve personal work. It equally involves two processes: evaluation and comparison. The birthplace of

benchmarking is considered to be the United States. However, in the world's history there can be found information concerning the earlier use of the benchmarking concept. In Japan, benchmarking in its meaning is correlated with the Japanese word «dantotsu», meaning "effort, anxiety, desire of the best (leader) to become even better (leader)". In China, there is known the rule of the Chinese military leader Sun Tzu, who wrote: "When you know your enemy and know yourself, you will not have a dread of the hundreds of wars results". Benchmarking was introduced in 1972. Then research and consulting organization PIMS (marketing strategy impact on profit) determined that in order to find an effective solution in the field of competition, it was necessary to know the best practices from other companies that were successful in similar conditions. In 1979, the American company "Xerox" has started a project "Benchmarking Competitiveness" for cost and quality analysis of their own products in comparison with Japanese ones. The project was a great success. The purpose of benchmarking is to firmly establish the likelihood of the enterprise success by means of a study.

Outsourcing (an external source / resource usage) is the transfer of specific business processes or functions performed by an organization, on the basis of an agreement, to other service companies specializing in this field. In contrast to the services and support facilities that have a one-time, occasional, and random character and are limited by the beginning and end, the outsourcing usually receives the functions of professional supporting of the positive-acting working capacity of individual systems and infrastructure on the basis of a long-term contract (at least 1 year).

In Russian and foreign studies there have been analysed the possible options for transferring company management functions to other organizations, and building relationships between customer and contractor.

According to Aleshnikova V.I. [5], the attractiveness of outsourcing companies is based on the expected benefits:

- Strategic benefits to be achieved through improved operations, improved manageability, gaining access to new and innovative ideas;
- Organizational benefits in terms of increased efficiency by concentrating resources on core, profitable lines of business;
- Improving the service quality and customer satisfaction;
- Changes in management system and improvement of its flexibility;

- Financial benefits from the release of part of the assets and their investments reduction;
- Assets concentration on the main organization tasks;
- More efficient use of resources by an outsourcer;
- Personnel benefits, which represent the new opportunities for professional and career development, as well as staff motivation.

Thus, as the result of the outsourcing management model introduction, there are performed cost savings by improving the efficiency of the whole enterprise, and there is an opportunity to release the appropriate organizational, financial, and human resources to develop new areas, or concentrate on existing ones, which are requiring our attention.

However, in our opinion, the decision to implement outsourcing in the company should be taken only if being certain in its appropriateness based on the necessary calculations.

Business Process Reengineering. As we have noted, one of the most important problems of the modern industrial enterprises is to reform their management and organizational structure in order to create new, adequate to changed realities economic environment. At present, scientists and researchers offer many ways to perform enterprises reforming procedure, but this is the so-called business process reengineering that helps to achieve multiplying effect of the organization's operating efficiency from the perspective of time / result.

The cornerstone of the business process reengineering is a process approach, according to which there is performed processes modelling, affecting the company's activity. With the help of business modelling there occurs formalization of the basic business processes that take place in the enterprise [6]. Even at the most general approach, all key processes in the organization are divided into two groups:

- Being of tangible nature (processing of raw materials into products);
- Informational (information processing).

Industrial enterprise combines both groups of processes, as its activity is connected directly to the package of measures addressing the raw materials processing and production of finished goods and work related to the processing of information data necessary for the operation of the enterprise.

The main features of this reorganization are:

- A broad delegation of authority and responsibility of the executors;
- Reduction in the level of decision-making;
- The imposition of a number of tasks beyond the enterprise applications requiring high cost and highly qualified staff;

- Automation technology business process execution.

After the transition to the new management and organizational structure it is necessary to analyse the achievement of the, given at the beginning of the reengineering process, performance criteria, based on which it is possible to make timely decisions concerning the necessity of business processes adaptation to the external environment changes. The result of a business process reengineering introduction should be the business processes formation radically different from the traditional ones [7].

Creating self-organizing management systems. The concept of "self-organization" in social systems sounded for the first time in 1984 in the

collected volume "Self-organization in social systems" published by "Springer". There were also stated the prerequisites and principles of this new field of management theory and practice. Khitsenko V.E. describes in his article the Stafford Beer's viable system model, focused on recognition, deployment and support of self-organizing tendencies. Problems of changing and self-organizing management of socio-economic systems are considered by Sukharev M.V. in his work "The order movement in nature" and "Evolutionary management of socio-economic systems" [8]. The author puts forward a new concept of "evolutionary idealism". He calls so the developed between 1973 and 1987 meta-approach, which is the central object of the movement and development of ideas.

**Table 1. Ways of improving the management system based on the "requisite variety" law**

Ways to improve the management system	Implementation
1. Growth of the management system ( $V_{ms}$ ) diversity	Growth in the number of management personnel, improving their skills, mechanization and automation of administrative operations
2. Reduction of the managed object ( $V_{mo}$ ) diversity	Establishing clear and certain rules of conduct for system components, such as the unification, standardization, typification, introduction of line production, etc.
3. Decrease of the management requirements level	Reducing the number of continuously monitored and controlled parameters of the controlled system
4. Management system self-organizing by means of managed objects self-organization	Limitation of monitored parameters by creating self-regulating units. Example: autonomic management areas with a closed production cycle, the relative autonomy and limited intervention of centralized government until the results of self-organizing activity units are located within acceptable limits

It should be noted that one of the management systems laws, the "requisite variety" law by Ashby U.R. [9], is now closely connected with the development of the self-management tendency within the enterprise management systems. According to this law, the value of the variety of management systems  $V_{ms}$  should be higher than the value of the variety of managed object  $V_{mo}$  :

$$V_{ms} \geq V_{mo}$$

Let us consider the following ways to improve management systems at complication production processes.

### Conclusion

In the current market conditions, the forecasting of the company's competitiveness and its factors in Russia is becoming a necessity, while within the competitive struggle, by all its immensity and severity, the winner is the one who is constantly analysing the market environment, and anticipates the behaviour of competitors fighting for their market positions.

For effective competitiveness management providing, it is not enough to possess common sense and experience of the leaders, you need to perform an immense attraction of modern analysing methods for large data amounts, modelling and computerization of management processes. Competitiveness management promotion should contribute not only to the growth of financial and economic activity of the enterprise and encourage saving of all types of resources based on their effective usage, but also to the higher level of satisfying the growing needs of the products buyers [10].

We believe that the selection, formation and implementation of enterprise management system are necessary to clearly distinguish between the positive and negative effects of any innovations in the management of industrial enterprises. Perhaps, some of the developments will be relevant only in relation to highly specialized enterprises.

Sometimes, the distinguished promising areas of enterprise management system reforming are being updated not only in manufacturing, but also create the entire trends in management as a science of

controlling. In each case, we can talk about changing the specific characteristics and elements of enterprise management system.

However, note that the most promising trends (such as self-organizing in enterprise management systems) take particular relevance in situations of uncertainty, which are observed in terms of economic instability, which will be discussed further.

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**References**

1. Rudychev, A.A., 2013. Mathematical Model of Adoption of the Administrative Decision as Means of Increase of Competitiveness of the Industrial Enterprise. *World Applied Sciences Journal*, Vol. 25 (N. 1): 113-118.
2. Glisin, F.G. and Voronina G.O., 2004. Concerning the competitiveness of an industrial enterprise. *Economist*, N. 6: 18.
3. Negandi, A.R., 1968. Advanced Management Know – How in Underdeveloped Countries. *California Management Review*, Vol. 10 (N. 3): 53-62.
4. Rudychev, A.A., 2013. Reforming the industrial competitiveness management system in turbulent external environment. Monograph: 118.
5. Nikitina, E.A., 2012. Features of indicators set formation to assess the competitiveness of industrial enterprises at the sectorial level. *Social and humanitarian knowledge*, N. 8: 253.
6. Hendricks, K. B., 1997. Does Implementing an Effective TQM Program Actually Improve Operating Performance? Empirical Evidence from Firms that Have Won Quality Awards. *Management Science*, Vol. 43 (N. 9).
7. Competitiveness and Business Environment in Finland – an International Benchmarking. Ministry of Trade and Industry of Finland, 2004.
8. Competitiveness and Business Environment in Finland – an International Benchmarking. Ministry of Trade and Industry of Finland, 2004.
9. Rudychev, A.A., 2013. To the Question about Basic Directions of Enterprise Competitiveness Increase at the Branch Level. *World Applied Sciences Journal*, Vol. 24 (N.12): 1707-1710.
10. Worthington, S. A., 2010. Three-dimensional approach for auditing brand loyalty. *Journal of Brand Management*, Vol. 17: 243-253.

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