

DUTKIEWICZ Maciej

THE INNOVATIVE CHARACTER OF THE CONSTRUCTION COMPANY AND THE INVESTMENT PROJECT MANAGEMENT CONCEPTS

Summary

The paper presents the characteristics of modern construction company and basic modern management features. Attention is drawn to the simplified organizational hierarchy, blurred information and decision-making structures, informal network connections for quick, direct flow of information. The structure of this type is the adaptation of innovation and facilitates the creation of ideas. Features of modern enterprise conducive to competitiveness with other companies and even obtain a competitive advantage.

INTRODUCTION

As a result of technological development, market changes, rapid technological progress there is a need for change in the functioning of the organization of enterprises. Today's investment embodiments differ from those which were carried out 3-5 years ago. Further technical progress, using modern solutions that significantly reduce construction time, allow for the implementation of a less favorable climatic conditions, especially at low temperature, meeting the technological requirements. With the development of modern communication technology solutions to technical modifications related to changes made by the investor or arising out of errors in design, manufacturing and workmanship for construction are resolved immediately. Teams of construction manager, contractors, designers, supervision work together. The speed and range of the work may create confusion and additional turbulence in the execution of the works. To minimize them and to avoid the risk of a further unfavorable situation reorientation in the functioning of the structure of the organization and its concept of operation are needed.

1. TECHNOLOGICAL DEVELOPMENT AND ITS INFLUENCE ON MANAGEMENT IN THE CONSTRUCTION COMPANY

Changing an existing organization is not enough, but it requires innovative solutions, sometimes rejecting the existing rules and practices. Company to compete also for future markets, not really formed, it must stimulate the creation of new patterns and create the needs of potential customers. We are in the peak of the development of knowledge-based economy (KBE), which is an economy that is based directly on the production, distribution and use of knowledge and information [1], which according to A. Kozminski company's competitive advantage stems directly from the key role of knowledge in its performance. Contemporary organization as a result of the inevitable transformations transforms into a so-

called intelligent organization, characterized by customs market strategy. Such an organization has the necessary managerial expertise required to make daily and long-term decisions. It is flexible with respect to changes in the external environment. The company is a kind of structure- process evolving in a dynamic manner by well managed external and internal information. The decisions are based on a comprehensive knowledge gained by the organization during learning and then developed. In connection with the habits of customers who attach themselves to the well-known and best practices, the trader must make further innovations to meet the hyper market [2]. These are situations which are contrary to each other and hence the main difficulty consists in reconciling the two mechanisms.

Modern enterprises have simplified organizational hierarchy, blurred information and decision-making structures, informal network connections for quick, direct flow of information.

The structure of this type is the adaptation of innovation and facilitates the creation of ideas. When creating new rules and forms of governance according to Zofia Mikołajczyk [3] we must remember the contribution of science to not cross out what you can benefit. The modern organization is decentralized and relies on lower-level authorization management to make certain decisions. The condition of decentralization, which will bring the desired effect is to identify the user, and in fact the area of competence of action for each indoor unit, which is called the center of responsibility. C. Drury [4] defines the resort area of responsibility as a company with a specific shape, performance and resources. Virtual organization is a dynamic management tool, which is based on computer networks and possibility to make use of bank information [5]. It's kind of a combination of resources of cooperating companies, implementing joint projects in order to achieve the benefits of greater than the work in the traditional way [6]. All of these forms of organization are based on knowledge.

Modern enterprise, intelligent organization, knowledge-based, is distinguished by performance rich in knowledge, services more knowledge-intensive than based on physical work. An enterprise hires high-class working professionals whose work is not carried out according to the drawings and the known rules of action, but it is creative and open to change. There is only imposed limited course of action, and their knowledge is wider than the knowledge of their bosses. The means of production of knowledge workers is their knowledge. By P. Drucker knowledge workers are motivated to work by the same issues that are a stimulus to action for volunteers, that are: job satisfaction, a mission of organization that they support and gaining goals.

These employees work in organizations as partners, ie the problems and tasks are consulted and discussed with them and not ordered them to do.

Technological developments and the rate of change in the market necessitate a reassessment of existing information management models. Short time to make decisions, a vast amount of information processed and the number of variables needed to request requires a fast and error-free analysis. Such opportunities do not provide systems based on classical theories of management. Models processing the data in a dynamic manner allow for the exchange of information in a network of organizations, continuous review - Learning Network, which supplies it with all necessary information and develops mechanisms for, verifying in real time. An important feature of this management model is to test the model in different variants of decisions. Activities of the network, which is connected knowledge workers who are experts in various fields are part of a virtual organization. Organization intelligently adapts to the current situation. B. Mikula modern organizations are learning organizations, gaining and developing knowledge and skills, using the latest technology in the field of information and communication solutions. The basic parameters of intelligent

organizations are endless possibilities for the collection of data and quick access to information that is relevant to the current decision-making process under analysis. In such organizations it is possible to learn a network of organizations in a dynamic manner while verifying and analyzing the situation of the previous being replaced by the current. The intelligent organization creates test models for comparisons of analyzed current decision problems and there are also created hybrid models combining proven models and procedures for the operation with innovative techniques. Such an organization has a high capacity to adapt to the changing environment and make organizational changes. They operate in the proper accounting systems, internal control and reporting, which aims to study the effectiveness of the mechanisms implemented in organization. For the proper functioning of such an organization there must also be fulfilled certain conditions. Professionals creating a network must be open to change and the process of improving their skills, they must present a common vision, have passion to create. The structure of the organization must support the learning and acquisition of knowledge, giving the freedom to create enabling output of workers outside the outlined framework. On the other hand, it should be the duty of the employee to disseminate knowledge.

By P. Senge intelligent learning organization provides a common platform for the fulfillment of vision, team learning workers rich in ideas, with consequence are designed to achieve the target. Staff of modern organization are aficionados continually looking for opportunities for improvement and innovation. For many years, the theory and practice of management focused on the optimal use of material resources.

According to Howell, elimination of waste and reduction of costs associated with improper fitting- time, space and the means of production, which have no direct effect on the result of the work, are the elements of human activity, that should be improved in an effort to optimize the process and minimize the risk of loss or profit below the expected level. Lean production, lean management and reengineering were methods used to reach this goal. These methods indicated that the reason for the success is the maximum reduction of production costs and the implementation of projects. The attention focused on reducing workload, increasing efficiency, productivity, machinery and equipment. There is a limit of these actions, which cannot exceed the potential to achieve further goals. This fact has been a breakthrough in the search for new methods, based on an innovative approach to reality. The basis for such thinking is human capital, which has become paramount in contrast to human resources, posed on a par with the financial resources and property. According to this approach, people - workers, encouraged by their superiors - partners are much more prone to creative innovative activities. This gives you endless possibilities to create and expand tangible and intangible resources. Intangible resources are human thought and intellectual capital, which are in the post-industrial era of the greatest value. The pace of change taking place in the world, including the functioning of the business has an impact on the manner and process of the investment.

Construction company to thrive, it must adapt flexibly to market requirements, evidenced by: speed, innovation, quality, customer care expressed in the individual approach to his expectations. It happens that the investor has only a general knowledge of construction solutions, installation of object. In this situation, a professional performer attempts to realize the concept of the investor, especially if they are not included in the construction or executive projects.

The customer does not have to be a specialist in the field of services or goods requested from the contractor or the manufacturer, and therefore flexible entrepreneurs should customize their offer in order to meet customer's expectations. The basic idea of the entrepreneur is the fact that change is a constant part of management. The entrepreneur must have a permanent redefinition how it carries out business and be ready to abandon the archaic

solutions based on models that do not adequately describe the current reality. It's not a reality of saturated market where there is no room for innovation. The ability to optimize the performance and flexibility to adapt to new conditions are necessary. Resistance to change, especially in the construction, makes the companies act according beaten patterns are not looking for new solutions in the intensity required by the turbulent environment. This phenomenon was called active inertia by J. Penc and E. Fiddler. According to B. Mikula changes should be seen not as a threat but as an opportunity for growth and success. Development of new forms of organization and implementation of modern management methods require a profound restructuring of enterprises. Flexibility is a key distinguishing feature of modern construction company. To be able to make informed choices about the operating procedures there must be known evidence for the use of each of these alternatives. Access to this information must be quick and easy. Flexibility can be expressed in a number of areas: - the structure of the company, which varies depending on the needs and responsibilities, and powers of the staff are not clearly marked. Employees focus on communication rather than on controls, employees are extensively specialized. This model still differs from the organization of a number of companies in which managers and CEOs prefer a pyramidal structure where information and knowledge go through many organizational units, before it reaches the decision maker - manager or president. This structure does not serve the development of the company, does not teach self-reliance activities of its employees, it takes time many people in the organization and extends the process associated with the passage of information through all levels before a decision is made, - of working time, which is mobile and subordinated achieving results. Commitment to continuous day, work week is a remnant of most of the previous socio-economic development, the system of work was associated with a command economy. Companies produced according to the plans outlined in advance, which were prepared outside the business by people not related to it, in isolation from the needs of the market. Currently, in an economy in which production depends on the demand in the market and is growing so rapidly that for some time to pass the crisis, working hours must read market needs, but also needs of employees of the company - the legal forms of entities operating function tasks, such as providing teleworking or telecommuting. The employer and employee communicate primarily by telephone or the Internet. The employee is not bound by space or time to work, allowing him to better align it to the needs of the market as well as to their family situation and health. This way of providing employment to a large extent brings effect of reducing its fixed costs, such as those related to the rental or purchase of premises as employees may work in their own homes and also reduces the time associated with the work, because employees do not lose it for commuting to the workplace. Flexibility businesses are also open to the network. The companies that are in competition, to some extent vary and can work together. A feature of these high-tech structures are linkages mutually intersecting and penetrating.

The flexibility of the organization is also associated with the ability to make the necessary changes. This is due to the elaboration of a method of implementing changes that they do not cause unnecessary confusion and disappointment, and bring the expected benefits and are the least burdensome to their communities. Research distinguish two concepts of change: hard and soft. The first is implemented to bring a rapid improvement in economic indicators, increase the value of a listed company. The means to this aim are drastic relief, deep restructuring, extensive use of financial incentives. Changes are introduced by top-down commands without the opinion of workers and trade unions. Strategy of "soft" making changes is used to improve the organization, create a company culture, better use of human resources . Managing using the method focuses on the mentality, attitudes and commitment of the employees, which are invited to a joint analysis of their behavior and methods for improving quality and productivity. Experience shows the best results after a skillful

combination of both approaches. Modern operating company has economic position of workers.

Most important is the man with the unpredictability of nature, which may be a factor in strengthening initiative, creativity and entrepreneurship. The success of companies opt unique individuals who have the capacity to innovate, leading to progress. Liberated management, which pioneer became T. Peters, performs concepts based on the empowerment of people. Workers carry out their tasks and take full personal responsibility. This method of management fosters employees' self-reliance and sense of responsibility, as well as their creativity. From the point of view of the effectiveness of decision-making, it is important to simulate phenomena in the virtual space. These activities are very popular in advanced economies, characteristic of the digital society, in which the employee is active intellectually, has the opportunity to develop and reach fulfillment. In this way the company uses innovation, whose authors are employees excited to freedom of thought. The creation of such rules, the organization requires prior preparation and maturity and responsibility of employees. Only in such circumstances place of subordinates take cooperating persons. Only those responsible will take care to improve its image. The employee is aware that the intellectual capital is an important part of his career. Basic unit of a modern economy is not a company but a single man. J. Penc expressed the view that only the order between interacting people, partnership and full involvement of their energy and intelligence may allow the company to face the demands of the new environment, which creates a market economy. By P. Drucker in the organization persons working together take place of subordinates.

2. APPLYING KNOWLEDGE IN CONSTRUCTION COMPANY

Knowledge, including knowledge of the risk, is the result of combining the experience and the learning process. It is an intangible asset and resource of companies. According to Plato, knowledge is a true, justified belief. Knowledge fulfills its creative role if conditions are maintained for the implementation of the action of business. They are: the company structure and corporate culture. B. Mikula made an arrangement of concepts: data - information - knowledge - wisdom. Data are the raw facts. The data that are selected, evaluated according to specific criteria may create a higher quality - information. Knowledge is the information set out in the context of organizational, social and economic. Information becomes knowledge at the time of its interpretation by humans. Wisdom is the knowledge in a complex of intuition. In practice, we can distinguish several types of knowledge because of its subject matter, such as knowledge of the facts "know-what", knowledge of the principles and rights in the nature of "know-why", confirming the knowledge skills of people and teams, "know-how" knowledge of the holders of knowledge, "know-who". In the literature there are two types of knowledge due to the nature of knowledge. Silent knowledge or hidden knowledge is ineffable, silent, natural, opposed to the formal or explicit knowledge. The managers of construction companies continue their activities based on the principle of "command and control", which is certainly not conducive to the development and transfer of knowledge. With the advancement in the management of the organization in the field of knowledge management, intellectual capital, integrated systems have developed. According to W. Grudzewski, knowledge is characterized by domination, inexhaustibility, simultaneity and non-linearity. Domination is expressed in the fact that having some of resources may give the company a strategic advantage. Body of knowledge to have a strategic character must be valuable, rare and used effectively. Inexhaustibility means that the resources of knowledge do not diminish with the transfer. Simultaneity allows the use of knowledge by many organizations at the same time. Non-linearity is the lack of functional correlation between the amount of resources and the benefits of this fact for the company. Due to the changes of environment knowledge requires constant renewal. It takes on particular significance in

relation to a particular task. Knowledge management is the process of searching both ways of using knowledge to improve the efficiency of enterprise, knowledge management in the organization, as well as encouraging employees to share knowledge.

In the management of knowledge, including knowledge of the risks in a construction company, there can be used models known in the literature [Fig.1]. These include the Japanese, the resource and the process models.

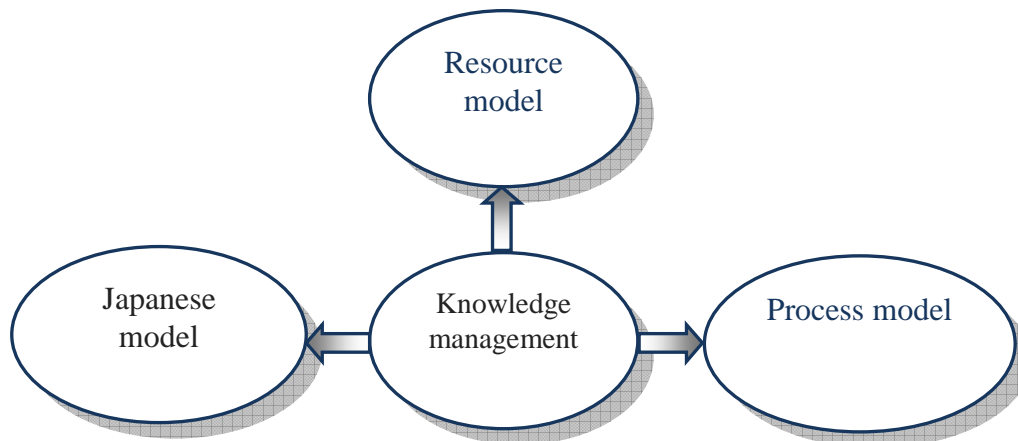


Fig. 1. Knowledge management models

Japanese model has been developed by I. Nonaka and H. Takeuchi, who at the core of his conception of knowledge processing recognize the quiet to the clear, structured, easy to verify and distribution. Generating knowledge takes place during the four- cycle processes. The adaptation is based on the transformation of knowledge into new knowledge peaceful quiet. The purpose is to disseminate knowledge hidden. The manifest is to change the quiet knowledge in formal knowledge through dialogue. The merger/combination involves the creation of new knowledge and involves combining various components of knowledge available . The process of externalizing/internalising is the inclusion of formal knowledge in the sphere of tacit knowledge. Converting knowledge and interaction of knowledge quiet and formal cause an increase of knowledge. The **resource model** highlights the role of enterprise resources in the form of all of its assets, skills, organizational processes, information and knowledge. The competence of employees are their skills and knowledge based on applicable standards and values of the organization. The organization implements and makes the integration of new tools and technologies, flexibility and an open innovation approaches, acquires knowledge of an organization's environment. The **process model** includes administration of the thematic knowledge. To achieve this objective knowledge can be managed through the processes: knowledge creation, knowledge codification and knowledge transfer. The process of knowledge is based on the actions taken by the company to increase the amount of knowledge. This may be to stimulate initiatives and cooperation with workers forming centers of expertise. This process can be distinguished: learning, adaptation, implementation and innovation. The codification of knowledge is an appropriate form of transmitting knowledge to facilitate access to the people who at the moment they need it, an example might be a book of standards and regulations for building construction and industrial applications. The process of knowledge transfer of knowledge transmission lines and its absorption. Knowledge transfer can be done through training, conferences, collaboration systems, expert systems, including a FAQ (frequently asked questions). The construction companies are large deposits of silent knowledge that are little used by all employees. This

knowledge is a special value, because in addition to general characteristics, contains a number of individual solutions in design, technology, management with regard to the possibility of human and hardware organization. Hence, due to the unique and individual nature of knowledge, the Japanese model could take more attention to business in terms of its use and development so as to make best suit the needs of the company. There are many concepts of knowledge management. The concept of knowledge management is capturing and sharing of knowledge in such a way as to be accessible to everyone in the organization, at any time. The origins of the discipline of knowledge management should be associated with the publication of Nonaka. It includes the construction of tools and methods to manage the flows of knowledge in order to create the right conditions for innovation and human capital management. Knowledge management brings a number of other benefits. The incorporation of knowledge into products, services and processes makes them more competitive, due to better identify the needs and expectations of customers. Recognition of knowledge workers and retain your most valuable employees optimize the employment fluctuations. Knowledge management can reduce operating process by eliminating unnecessary processes. The companies use different methods of management concepts. The most commonly used are: quality management, process management, competency management, weight loss companies (lean management), the use of professional services (outsourcing), mimicking the best (benchmarking), CRM (customer relation management), the concept of the learning organization (learning organization). Do not incorporated herein rich literature on the various methods. It has been compiled and discussed among others by Jan Lichtarski. Ensuring the availability, speed, and news of knowledge leads to better relationships between staff information. The organization shows the process of sharing knowledge, especially knowledge quiet. HR managers emphasize the education and development of our employees . Knowledge Management maintains a flexible structure of the organization, less formalization, decentralization of decision. The basic value of knowledge management include: systematic, comprehensive, purpose and productivity. Knowledge management system is based on three pillars: information, knowledge and competencies. Developing in two directions: information management and human capital management. They are the development of traditional management.

The application of new management methods and techniques must be a total, which include all management functions . The era of information and knowledge has technological race that makes learning fast fading and requires continuous updating. Knowledge management will develop towards the specialized methods of dealing with the disposal of knowledge. The application of knowledge management in an organization can be achieved through knowledge management system, which is a set of methods and tools by which the company intends to acquire knowledge and use it to further their own goals, integrating the dimension of strategic, operational and technology. By B. Mikula practical strategies to meet company and supporting knowledge management. The first one focuses on priority issues such as the creation of new knowledge and its dissemination fast, other refers to the expansion and testing of new knowledge management tools, such as use of electronic storage and transmission of knowledge. These include e-learning systems (e-learning), customer relationship management customer relationship management (CRM) and are oriented either to new technologies (personal information) or the people (human capital). There are many knowledge management strategy. Codification strategy is a centralized, top-down knowledge management system, through which knowledge is structured in technologies, procedures, manuals, databases. In the development of this approach can be identified using the phase information within the organization, outside the organization and creation of a data warehouse (warehouses), phase of dynamic flow of knowledge: on-line, CRM, e-business. Codification strategy is used in organizations where manufacturing processes are massive, and the effects

in the form of products or services are standard, such as the production of bicycles, or a chain of restaurants. Personalization strategy is a bottom-up management system, based on continuous learning, whose primary objective is to create a network of connections between people. As part of this strategy generated communities of practice, that group of professionals seeking common solutions and a common passion for innovation. An additional element of bonding are tools for bottom-up knowledge management system . Personalization strategy is particularly well suited to organizations that provide sophisticated advisory and design in unusual cases, challenging and unique. The aim of the strategy is to create a knowledge creation, which is the basis for innovation. The knowledge transfer strategies sourced by the organization comes from other companies, is rapidly distributed and is applicable. Knowledge protection strategy focuses on maintaining previously produced or acquired knowledge in an original and creative state.

CONCLUSIONS

The construction market with its diversity and wide range still will require new solutions to architectural design and installation to ensure greater safety and better use of facilities and efficient energy management. Higher safety requirements due to use of objects come from the use of slender materials and structural elements that are therefore more susceptible to the static and dynamic impact. Architecture of buildings shapes the environment of human life and its environment. Construction, as the driving force of the economy, affects the development of demand and the development of the rest of the economy As a result of the aforementioned changes occurring economic and technological development of the definition of the organization, the business is more of a business process consisting in knowledge management, intellectual capital, innovation, quality and customer relationships than with the institution assigned to the site of action in which there arise certain goods.

BIBLIOGRAPHY

1. OECD, The Knowledge – Based Economy, OECD/ GD (96) 102
2. D’Aveni R., Hypercompetition: Managing the Dynamics of Strategic Maneuvering, Free Press, New York 1994
3. Mikołajczyk Z., Techniki organizatorskie w rozwiązywaniu problemów zarządzania, PWN, 2001
4. Drury C., Rachunek kosztów, Wydawnictwo Naukowe PWN, Warszawa 1995
5. Grudzewski W., Hejduk I., Przedsiębiorstwo przyszłości. Difin, Warszawa, 2000.
6. Grudzewski W., Hejduk I., Charakterystyka organizacji wirtualnej. Ekonomika i Organizacja Przedsiębiorstwa, nr 5/ 2000.

NOWOCZESNY CHARAKTER PRZEDSIĘBIORSTWA BUDOWLANEGO I KONCEPCJI ZARZĄDZANIA REALIZACJĄ INWESTYCJI

Streszczenie

W artykule przedstawiono cechy współczesnego przedsiębiorstwa budowlanego oraz podstawowe nowoczesne cechy zarządcze. Zwrócono uwagę na uproszczoną hierarchię organizacyjną, nieostre struktury informacyjne i decyzyjne, nieformalne powiązania sieciowe umożliwiające szybki,

bezpośredni przepływ informacji. Struktura tego typu służy adaptacji innowacji i ułatwia tworzenie pomysłów. Cechy nowoczesnego przedsiębiorstwa sprzyjają konkurencyjności wobec innych przedsiębiorstw a nawet uzyskiwanie przewagi konkurencyjnej.

Autor:

Dr inż. **Maciej Dutkiewicz** – Uniwersytet Technologiczno-Przyrodniczy w Bydgoszczy – Wydział Budownictwa, Architektury i Inżynierii Środowiska, Katedra Konstrukcji Budowlanych, e-mail: macdut@utp.edu.pl