

## **Knowledge management as an aspect of the intellectual capital management**

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### **ABSTRACT**

The article describes the essence of the concept of knowledge management as an aspect of intellectual capital management, which serves as the main resource for improving of the company's competitiveness and defines intellectual capital as an object of management. Managing intellectual capital, representing the company's core value, contributes to achieving the company's goals, creates the prerequisites for innovation, provides benchmarking in all activities, training and motivation of employees, increasing the efficiency of design, procurement and marketing processes, provides a fast pace of corporate development and implements the management process with maximum efficiency.

**Keywords:** knowledge management, intellectual capital, competitiveness, aspect, pace of development, company image, management concept, professionalism, competence.

### **1. INTRODUCTION**

The society in its development is inextricably linked with the dynamic updating of the system of managerial relations, which at the beginning of the third millennium are gaining new qualities that are manifested in all spheres of production, the formation of the global trade system, business, finance, the development of a modern personnel management concept.

Personnel management is one of the most important functions of management, as people have always been and will remain the main productive and creative force, despite all achievements in the field of mechanization and automation of labor, and knowledge is a key resource of organization, use and improvement of which allows companies to adapt to new conditions of the external environment, releases huge potential of saving the production resources, which can not be obtained through traditional management mechanisms and implements the realization of opportunities knowledge management for the company (Inozemtsev, 1998; Vesnin, 2003; Pawar, 2009).

According to scientists, society begins to understand that the values of any company are not only its assets, products, and property, but also company's experience, qualifications of employees, their loyalty, know-how, culture, in other words all that is included in the concept of "Intellectual Capital", and creates and develops a knowledge management system as a specific strategy of the enterprise, aimed at forming its internal knowledge culture and creating a mechanism for their transformation into the company's welfare (Gaponenko, 2001).

### **2. RESEARCH PROBLEM AND QUESTIONS**

The questions of the general theory of knowledge management were studied by scientists K. Arjaris, K. Viig, T. Davenport, A. Yegorshyn, M. Zak, J.Br. Quinn, T. Maksimenko, L. Prusak, K.A. Sweeby, G. Takeuchi. In the development of the knowledge management system the greatest results were achieved in the papers of foreign and domestic scientists E. Broking, M. Blauga, V. Vesnin, A. Gaponenko, V. Inozemtsev, A. Kolot, D. Minzer, F. Makh lupa, T. Stuart, M. Poliani, T. Schulz and others. L. Prusak. V. Zinov, K. Safaryan, O. Kozyrev and others consider intellectual capital in the process of intellectual activity. Knowledge management was marked out in a separate science by leading managers and practitioners R. Bakman, M. Zak, K. Colison, I. Nonaka, G. Parsel, L. Prusak, H. M. Marinicheva, G. Schokin.

The dissemination of knowledge through organizational learning in the theory and practice of modern management were researched in the papers of G. Azgaldova, L. Badalova, O. Glicheva, M. Dodgison, G. Inhema, S. Ivanova, J. Luftha, O. Orlova, N. Pavlychi, V. Panova, V. Pryadka, M. Sychevskii and others. The theory of intellectual activity is highlighted in the papers of A. Leontiev, I. Moiseenko and others.

The purpose of this article is to show the essence of the notion of knowledge management as an aspect of intellectual capital management, which will enable the company to strengthen its competitive advantages and develop new experience, enrich intellectually and interact effectively.

### **3. RESEARCH METHODS**

The essence of knowledge management concept, which are descended from English word combination "knowledge management", is gradually becoming popular both in academic and business circles. The reason for this popularity is, first of all, that in a fundamentally new business environment companies had to search for new models and management technologies that would ensure successful and long-term development. Classical approaches to ensuring competitiveness today do not work, and therefore there are prerequisites for finding new sources of competitive advantage, which are reflected in the concept of knowledge management.

Knowledge management is a modern management concept based on the consistent using of processes that control the creation, dissemination, processing and use of knowledge within the enterprise, which will ensure the tasks fulfillment and the implementation of set goals (Mavondo et al., 2005).

Knowledge management is not new theory, enterprises have always introduced educational programs, conducted trainings, stimulated the training of their employees, applied other technologies, but provided that the success of a company depends on company's ability to use intellectual assets. Under such conditions knowledge management becomes the main factor of competitiveness. The modern concept of knowledge management is a complex of managerial actions that organically combines informational and managerial components in order to realize the strategic goals of the company (Perkins and Stovall, 2011).

### **4. RESULTS AND DISCUSSION**

The Encyclopaedic Dictionary Webster provides the following definition: knowledge - 1) the fact or condition of knowing something with familiarity gained through experience or association; 2) A: the fact or condition of being aware of something, B: the range of one's information or understanding; 3) the circumstance or condition of apprehending truth or fact through reasoning; 4) the sum of what is known: the body of truth, information, and principles acquired by humankind. Another definition complements the notion: knowledge is a mixture of experience, values, information, intuition. It follows that the concept of knowledge should be considered in three dimensions: a core knowledges is a minimum that allows to engage in production; knowledges that ensure the success of a company and form a strategic potential that enables company to be competitive; Innovative knowledges forms the basis of leadership in their field. Researchers argue that knowledge is base all of managerial and economic relations, determin the benefits of business entities and provide exchanged and supply information to markets.

Scientific management offers a wide range of definitions of "knowledge management" concept:

- Knowledge management is a technology that includes a set of formalized methods that include: searching for and acquiring knowledge of the bearers of this knowledge; structuring and systematization of knowledge for the purpose of their storage and search; knowledge analysis to identify dependencies and analogies; updating of knowledge; knowledge distribution; generation of new knowledge (Sorakraikitikul and Siengthai, 2014).

- Knowledge management is a set of strategies and processes for identifying, gaining, disseminating, using, controlling knowledge and exchanging them to ensure business competitiveness (Milner et al., 2006).

- Knowledge management is the process and principles associated with the creation, acquisition, mastering and use of knowledge and experience. It is a process of gaining collective experience for the sake of the full use of its by company where it can be useful to achieve the highest efficiency. The basis of knowledge management is the use of people, processes and technologies, which enables company to optimize knowledge sharing and store them (Polyans'ka, 2014).

- Knowledge management is a strategy that transforms all kinds of intellectual assets into higher productivity and efficiency, new value and increased competitiveness (Pidopryhora, 2000).

Summarizing the studies conducted by domestic and foreign scientists, it should be emphasized that companies using knowledge management had increased the quality of management decisions, followed

by accelerating the response to changes in business, and improving customer service. In their managerial activities, the companies widely use human, labor, creative, educational, natural, institutional, professional, technical, organizational, financial, information and other potential. From this list human potential is determined by the main driving force of social progress, the main factor in the effective functioning and development of any organization (Jarugowa, 2003).

The system of knowledge consists of human knowledge, company knowledge, intangible assets and collective experience of personnel. Innovations is the result of interaction all these components. So the importance of knowledge in the formation of company's staff professionalism leads to find professional qualities of employees.

Management involves the development of human potential in environments of a corporate spirit, competition, various external influences and threats. The development of human potential is a set of measures aimed at improving the quality of human capital of the company, which in turn determines it as the main reserve for improving the efficiency of management, the quality of analysis and policy development, and the provision of quality services of management. Development of professional potential as a process of training company employees to implement new production functions, career growth, aimed at overcoming the difference between the requirements to the employee and the qualities of a person and requires considerable effort from the employee, and therefore impossible without his interest (Inozemtsev, 1998).

In the modern world, the social supplementary product is formed as a result of the use of accumulated knowledge in the process of labor, which has become the object of management in a natural manner. In knowledge management, knowledge is the foundation of knowledge, skills, experience, because knowledge covers theoretical and practical knowledge, everyday rules of conduct, they are based on data and information, always associated with a person and determine its professional competence. The statement of this fact gives us an opportunity to conclude: knowledge management can be perceived as a narrowed control over competences, because the competence of the company's professionalism consists of a combination of competencies and professionalism of employees.

We share the opinion of scientists that intelligence and creativity are the most important characteristics of the individual. Intelligence is the ability of people to thinking, mental work, conscious perception of the world, their own actions, rapid learning new. It is stable structure of mental abilities, which allows the combined experience and knowledge, capacity for analysis, comparison, classification, matching, it is the ability to creatively apply the acquired knowledge, to adapt successfully to the environment and life circumstances and effectively integrate into public life.

The structure of intelligence stipulates the level of mental development, which determines the ability of the individual to freely operate the knowledge and skills to ensure the assimilation of new knowledge and skills, and IQ is its measure: individual creativity and search activity, cognitive mobility, activity in the innovation and knowledge, emotional intelligence.

Market economy today is a complex economic mechanism, which encourages the development of intellectual labor, implementation into production innovative technologies, inventions, utility models, software, where industrial economy is inferior to intellectual one, the driving force of which is the force of ideas. World experience shows that intellectual economy stimulates high returns at low volume capital and number of employees, as elements of marketability are results of intellectual work: ideas, management decisions, inventions, innovations, in other words - intellectual capital.

Intellectual capital is knowledge that can be transformed into profit and evaluated through the level of intellectual development of the employee or the ratio of intellect. The intellect of a company consists of the intellect and efficiency of each employee's activity. Intellectual capital is the product of intellectual labor, creative efforts of the individual and the collective. As part of the intellectual capital, individual professionalism is ability of physical and spiritual properties of worker to reach high results of industrial activity in the given conditions, self-perfection at work, and ability to generate new ideas and to solve the problem. The structure of intellectual capital includes three elements: *Psycho-physiological potential*, which is the abilities and inclinations of the individual, the type of his nervous system, ability to work,

state of health, endurance, etc.; *Personal potential*, which is level of public consciousness, value orientation, attitude to work, interests, desire to move career ladder; *Qualification potential* which is volume and depth of general and special knowledge, level of labor skills and other skills.

The first intellectual property researchers, L. Edvinson and M. Melon, have a fairly broad interpretation of this notion. They include into intellectual property virtually all kinds capital, which cannot be evaluated using traditional methods of resource evaluation. Scientists have identified as part of the intellectual capital both "human resources" and "structural capital" and they argue that each of these forms of "capital" are generated by human knowledge, and their aggregate defines the hidden sources of values that give enterprise unconventionally high market valuation.

B. Milner et al. defines intellectual capital as a material consisting of knowledge and experience that can be used to create wealth, and also focuses on intellectual property (Milner et al., 2006).

Intellectual capital, according to V. L. Inozemtsev, is like a "collective brain" that accumulates scientific and everyday knowledge of workers, intellectual property and accumulated experience, communication and organizational structure, information networks and company image "(Inozemtsev, 1998).

J. Fitzenz asserts that intellectual capital is the "intellectual property" of the company and forms a chain of processes related to the network of various types of relations and human capital (Fitzenz, 2001). On the other hand, he calls the ability of company to profit from its own intellectual capital. This explanation also defines intellectual capital as the relationship between the employee, their environment and the structure in which they work.

Podoprigora O., sharing the opinion of J. Fittsenko, proves that intellectual property is the basis of intellectual capital, as it is the result of intellectual creative activity, the result of its own creative search, which must be objective, embodied in an objective form and be capable for reproduction (Pidopryhora, 2000).

In his papers, T. Schultz, "Investing in Human Capital" (1961), "Human Capital" (1964) argued that knowledges of worker, which he has got and uses in his professional activities, is the capital as this knowledges bring income. According to this theoretical studies, we argue that the human component of intellectual capital includes the intelligence of the personnel as well as its products, knowledge and information that can be used to transform them into a structural and / or market component of the enterprise's intellectual capital (Milner, 2003).

Both academics and practitioners are of the opinion that at the enterprise level, intellectual capital is the sum of three components: Human resources; Structural and Consumer capital. See Fig.1.

Human Resources is a set of knowledge, skills, creative abilities, as well as the ability of owners and employees to meet the requirements and objectives of the enterprise. It is the greatest value of the company, because it includes education, practical skills, intellectual activity and creative abilities of employees, their moral values, motivation to work, Cultural level, which are aimed at profit. It is a valuable assessment of the workforce, the intellectual efforts of higher-level employees who are in the process of developing intellectual profit, and according to the interpretation of the "Economic Encyclopedia", edited by S.V. Mocherny - this is the degree of incarnation in a person's natural abilities, talent, level of education, qualifications, as well as in the introduction of income (Jarugowa, 2002).

Structural capital is a corporate information systems, software, databases, organizational structure, patents, copyrights, trademarks, licenses, management processes that ensure the productivity of employees and the functioning of the enterprise, corporate culture. It performs two functions: the accumulation of knowledge as the basis of activity and accelerating the movement of information within the company.

Consumer capital is company's links with consumers of products through business relationships, contracts, markets, brands, trademarks, image, strategic relationships, based on the history of relationships, the continuous accumulation and restoration of information about them, its ability to meet their demands.

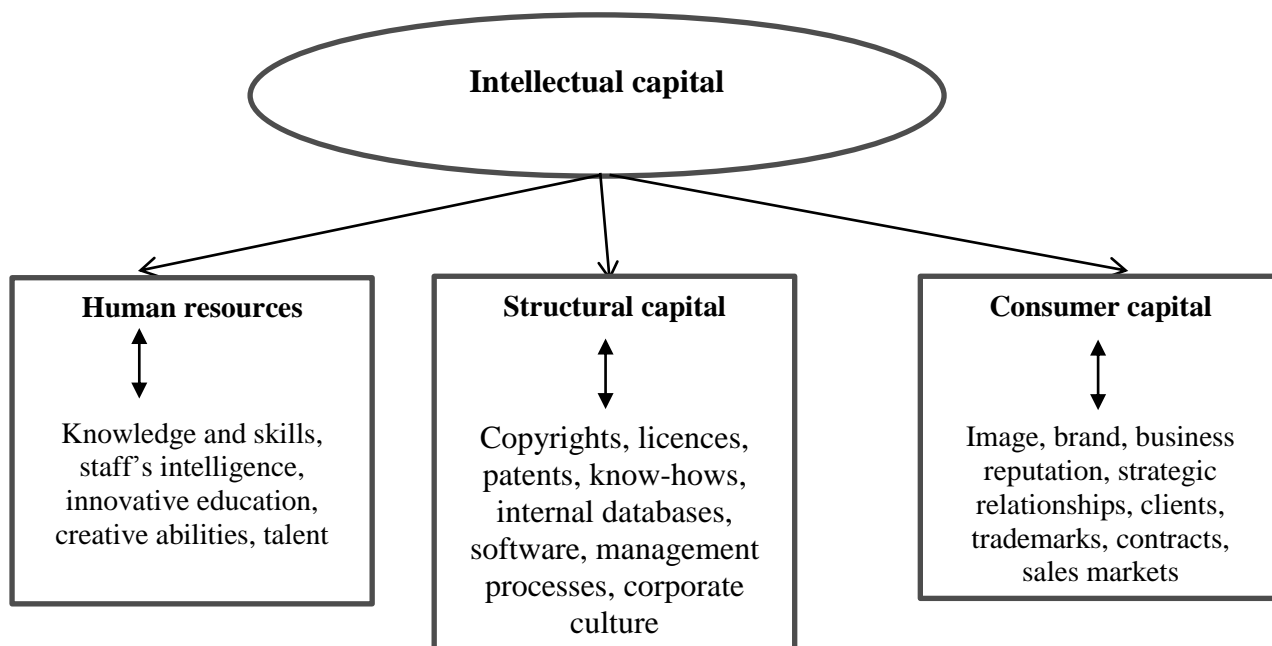


Figure 1. Structure of intellectual capital

The result of company's intellectual activity is the formation of the intellect of personnel and intellectual resources that can be transformed into intelligent products. Areas covering intellectual capital: educational, scientific, innovative, informational activities. The result of scientific activity is the new knowledge recorded on the carrier of scientific information in the form of a report, a scientific paper, a scientific report on research activities, monographs, scientific discovery, etc. The innovation process is aimed at the use and commercialization of the results of research and development, and the information one provides the exchange of information between the participants (Kaplan and Anderson, 2007).

Planning of intellectual capital is carried out in stages:

Stage I. *The Information provision of strategic planning of company's intellectual capital*, the main tasks of which are: description of the data structure of intellectual capital; collecting, sorting, processing, viewing and storing information about intellectual capital in the company database; formation of tables, queries and forms that contain information about it; detection of intellectual resources protected by law; timely including of the intellectual property into intangible assets of enterprises; notice of maturity of royalties and other periodic payments; formation of reports on creation and use of intellectual capital at different levels of management; Charting, analyzing the dynamics of the formation and use of intellectual capital, including the dynamics of patenting; monitoring of the process of creation of intellectual assets, etc.

Stage II. *The establishment of intellectual capital management goals* that cover simultaneously the different areas of operation of the enterprise and are classified in complex, partial and elementary. The *complex goal* of the enterprise is to create an intellectual organization with high competitive advantages, based on the production and use of intellectual products of the enterprise; in other words, to increase in market value. *Partial goals* are aimed at planning of individual elements, spheres, types of activities, operations of intellectual capital of the company. Partial goals are development educational, scientific, innovative activity. *Elementary goals* are aimed at highly specialized planning of individual elements of the company activity: qualification improvement, training; creating a working group for designing, etc.

Stage III. *The choice of methods for analyzing the factors of the internal and external environment affecting on the company's intellectual capital* through the use of statistical and sociological research and comparison methods, economic analysis and the method of expert assessments.

Stage IV. *The evaluation and analysis of factors of the external and internal environment* affecting on the company's intellectual capital are performed in accordance with their division into factors of indirect influence on intellectual capital and factors of direct influence on it.

Stage V. *The choice of the strategy for the formation and development of company's intellectual capital* on the basis of the relevant criteria, such as: the nature of the influence of external and internal factors on the company activities, the state of the company's intellectual capital, the science linkage, the scale of company activity, investment opportunities of enterprises, experience of company's intellectual activity, level of development of region intellectual infrastructure, value orientations of managers. Chosen strategy of company's development must meet these criteria. This strategy also implies the acquisition and using new information, knowledge, intellectual resources and products, adapting them to their own needs. At the same time, the company minimizes the cost of intellectual activity by concentrating on the search for ready-made intelligent products. Intellectual capital management is directed at the rational use of intellectual and informational resources, creation of a general organizational and informational environment for the development of information technologies, which enables the maximum use of acquired intellectual resources and products.

Stage VI. *Mapping the implementation of relevant strategies* is an instrument that enables company management to formulate and reflect the relevant goals and means of achieving them through the structuring of components, which are specified in the main indicators by type of activity. It makes possible to identify reserves for increasing the efficiency of the use of intellectual capital.

Stage VII. *The Evaluation of the chosen strategy* allows to create an intellectual organization that has high competitive advantages based on the production and use of intellectual products of the company; to increase its market value.

Adoption of managerial decisions on management of company's intellectual capital is a management mechanism that provides a choice of a way to achieve its goals (Khodayari, F. and Khodayari, B., 2011).

The economic efficiency of the management of intellectual capital has common criteria for the effectiveness of the formation and development of intellectual capital, where the main parameter of the performance is the level of intellectual capital. In order to evaluate the economic efficiency of intellectual capital management, the analysis of the influence of managerial potential is carried out, that is: the aggregate of all resources owned and used by the management system; management costs that determine the content, technology and volume of work on the implementation of appropriate management functions; the nature of the managerial work, that is, the effectiveness of the personnel in the process of fulfilling the tasks, realizing interests, achieving certain goals for the profitability of the enterprise.

Intellectual capital as a commercialized result of knowledge in modern conditions has become the main lever of economic performance of enterprises, it creates additional advantages in technology, production, gives an opportunity to increase the market segment, to receive unique competitive advantages. In order to use effectively intellectual capital, it is important to solve the problems of effective management through a well-formed toolkit, which will allow the complex development of all areas of intellectual activity and maximize the market value of the enterprise in the long run.

The carriers of intellectual capital are professionals who are endowed with unique creative abilities, the significance of which for society is best appreciated in market conditions. Important fact that intellectual capital as an economic category exists only in a market economy, the market pays for the fact that it owns value. Like any economic category, intellectual capital requires management: the improvement and borrowing of innovative production methods, the organization of the service sector through improved customer service, the generalization of experience and information (Kolodinsky et al., 2008).

The modern form of knowledge management is armed with intellectual resources and is truly revolutionary. Corporations introduce a special position of director of knowledge management or a director of intellectual assets, functions of which are: the creation and application of knowledge transfer infrastructure, combining libraries, knowledge bases, human and computer networks, research centers; interaction with external suppliers of information and knowledge; promotion of the process of creating new knowledge within the framework of strategic planning, marketing research, research and

development; monitoring of intellectual capital of the company; formation and implementation of knowledge management strategy (De Shields et al., 2005).

The transformation of intellectual capital into an innovative product is realized through the application of knowledge management and is the most important stage that connects science, inventor and consumer. Managing Intellectual Capital is a very challenging task. The intellectual capital of the company is closely linked to the company's activities, its competitive environment, its history and culture, and as this is a very individual category, each organization must have its own model and technology of capital management.

## **5. CONCLUSIONS AND RECOMMENDATIONS**

Hence, knowledge management is a new vector in enterprise management and is the main resource for improving competitiveness and defines intellectual capital as an object of management. In turn, intellectual capital represents the core value of the company and is a decisive factor in the competition. From this we can conclude that knowledge management as an intellectual capital management helps to achieve the company's goals, creates the preconditions for innovation, ensures the use of benchmarking in all its activities, training and motivation of employees, increasing the efficiency of design, procurement and marketing processes. Intelligent capital, in turn, is formed as a result of the knowledge management process. Comprehensive application of knowledge management will ensure the fast pace of corporate development and maximize the management process efficiency, will help the enterprise to get new experience, enrich intellectually and interact effectively, induces the creation of new products and services, the emergence of inventions.

## **6. CONTRIBUTION LIMITATIONS AND FUTURE RESEARCH AVENUES**

Prospects for further research in the field of knowledge management is the creation of a system of theoretical and methodological views of understanding, defining the essence, content, tasks, criteria, principles and methods of knowledge management.

## **REFERENCES**

- De Shields, W.O.Jr., Kara, A., Kaynak, E. (2005), Determinants of business students' satisfaction and retention in higher education: Applying Herzberg's two-factor theory. *International Journal of Educational Management*, 19(2), 128-139.
- Fitzenz, J. (2001), *Rentowność inwestycji w kapitał ludzki*. Krakow: Oficyna Ekonomiczna.
- Gaponenko, A. (2001), *Upravlenie znaniyami*. Moskva: ipk gosslozhbi.
- Inozemtsev, V. (1998), *Za predelami ekonomicheskogo obschestva*: Nauchnoe izdanie. Moskva: Nauka.
- Jarugowa, A. (2002), *Rachunkowość i zarządzanie kapitałem intelektualnym*. Gdańsk: ODDK/ J&Fijałkowska
- Gaponenko A. (2001), *Upravlenie znaniyami*. Moskva: ipk gosslozhbi.
- Kaplan, R., Anderson, S. (2007), The innovation of time driven activity based costing. *Cost Management*, 21(2), 9.
- Khodayari, F., Khodayari, B. (2011), Service quality in higher education. *Interdisciplinary Journal of Research in Business*, 1(9), 38-46.
- Kolodinsky, R.W., Giacalone, R.A., Jurkiewicz, C.L. (2008), Workplace values and outcomes: Exploring personal, organizational, and interactive workplace spirituality. *Journal Business Ethics*, 81(2), 465-480.
- Mavondo, F.T., Chimhanzi, J., Stewart, J. (2005), Learning orientation and market orientation: Relationship with innovation, human resource practices and performance. *European Journal of Marketing*, 39(11-12), 1235-1263.
- Milner, B.Z. (2003), Kontseptsiya upravleniya znaniyami v sovremennyih organizatsiyah. *Russkiy zhurnal menedzhment*, 1, 57-76.
- Milner, B.Z., Rumyantseva Z.P., Smirnova V.G., Blinnikova A.V. (2006), *Upravlenie znaniyami v korporatsiyah*: Uchebnoe posobie. Moskva: Delo.
- Pawar, B.S. (2009), Individual spirituality, workplace spirituality and work attitudes: An empirical test of direct and interaction effects. *Leadership and Organization Development Journal*, 30(8), 759-777.
- Perkins, D., Stovall, O. (2011), Resource consumption accounting: Where does it fit? *Journal of Applied Business Research*, 27(5), 43.

Pidopryhora O. (2000), Problemy systemy zakonodavstva Ukrayiny pro intelektual'nu vlasnist'. Intelektual'na vlasnist', 3, 3-14.

Polyans'ka, A.S. (2014), Rol' menedzhmentu znan' u sytuatsiynomu upravlinni na pidpryyemstvi. Stratehiya ekonomichnoho rozvytku Ukrayiny, 34, 157-162.

Shamarov, G.M. (2008), Problemyi upravleniya chelovecheskim. Upravlenie personalom, 186, 50-54.

Sorakraikitikul, M., Siengthai, S. (2014), Organizational learning culture and workplace spirituality: Is knowledge-sharing behaviour a missing link? The Learning Organization, 21(3), 175-192.

Vesnin V. (2003), *Tehnologiya raboti s personalom i delovimi partnyorami*: ucheb.-prakt. Posobie. Moskva: plit.