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FEATURES OF PERSONNEL MANAGEMENT IN THE INNOVATION PRODUCTION

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Іващенко А.Г., Пашкова А.В. Особливості управління персоналом в умовах інноваційного виробництва.

В умовах глобальних змін, що відбуваються у світовій та вітчизняній економіці істотно змінюється роль людини у виробничій діяльності. У статті розглянута сучасна теорія техніко-економічного розвитку, відображені етапи розвитку управління персоналом відповідно до технологічних укладів, розкрито зміст управління знаннями як основної концепції управління в інноваційному виробництві.

Ключові слова: персонал, економіка знань, управління, технологічний уклад, нанотехнології

Іващенко А.Г., Пашкова А.В. Особенности управления персоналом в условиях инновационного производства.

В условиях глобальных изменений, происходящих в мировой и отечественной экономике существенно изменяется роль человека в производственной деятельности. В статье рассмотрена современная теория технико-экономического развития, отражены этапы развития управления персоналом в соответствии с технологическими укладами, раскрыто содержание управления знаниями как основной концепции управления в инновационном производстве.

Ключевые слова: персонал, экономика знаний, управление, технологический уклад, нанотехнологии

Ivashchenko A.G., Pashkova A.V. Features of personnel management in the innovation production.

In the context of global changes in the global and domestic economy significantly changed the role of man in the production activity. The article deals with the modern theory of techno-economic development, reflected the stages of development of personnel management in accordance with the technological structure, disclosed the contents of knowledge management as a key concept in the management of innovative production.

Keywords: staff, knowledge economy, management, technological way, nanotechnology

In developed countries today is actively transition to a postindustrial society. Dramatically increases the role of science, innovation in the creation of GDP. One of the leading sectors of the economy is the sphere of Informatics and telecommunications, comparable in scale with the fuel-energy and machine building complex – the main sectors of industrial society is rooted in the past. At the same time, the sector and other traditional sectors of the national economy are undergoing qualitative transformation. Experts, both foreign and domestic today is already widely used concepts such as "knowledge economy", "knowledge management", "human capital", the "new economy" – Economics of technology.

For Ukraine that is in a systemic crisis of the economy, innovation model of development is extremely important. The Ukrainian economy is dominated by 3 and 4 technological structures. We are behind Europe on two technological structures. The country was among the last in the world ranking on several generally accepted methods for determining the competitiveness. The latest technologies give a unique opportunity for countries with limited resources "to jump" whole cycles of industrial development the technological development of an economy involves the development of the economy through the progressive changes, attracting investment, consistent growth of the scientific-technological sector and the knowledge economy.

Analysis of recent researches and publications

Known a number of fundamental researches of leading foreign scientists: J. Schumpeter, S. Glaziev, G. Nelson, S. Winter devoted to innovation economy. A structured analysis of technological structure implemented in the scientific works of Ukrainian and Russian scientists such as A.S. Filipenko, A.A. Chukhno, P.I. Yukhimenko, P.M. Leonenko, T.V. Bravdo, D.G. Lukyanenko.

J. Schumpeter believed that the engine of development is entrepreneurship: the only people worthy to be called entrepreneurs who are in constant search of new business opportunities.

Russian academician Sergei Glazyev in [2] and the well-known American economists Richard R. Nelson and Sidney G. Winter [8] howed that there is a

path of evolution of technological and economic changes through innovation.

The questions of modeling of economic development of the national economy and its separate regions are considered in the works of Russian scientists such as V. Geeta, V. Seminozhenko, P. Pererva, L. Fedulova.

Despite the fullness of their problems, a deeper understanding requires the development of human capital as an innovative factor of the process of formation of information-technological model of economic development of Ukraine. In the conditions of revolutionary changes in production and information technologies is a new management function, the task of which is accumulation of intellectual capital, the identification and dissemination of existing information and experience, creation of preconditions for the dissemination and transfer of knowledge [1-5].

The aim of the article is identify current concepts of personnel management in the innovation economy on the basis of the theory of longterm technological economic development.

The main part

The modern theory of long term economic and technological development in the structure of the

economy allocates the production of aggregates associated with each other similar technological chain, are reproductive integrity – technological structures. Each such structure is a holistic and sustainable education, within which is a closed cycle, including extraction and acquisition of primary resources, all stages of their processing and launch of end products that meet the appropriate type of public consumption. The life cycle of technological way covers about a century, the period of its dominance in economic development is from 40 to 60 years, but with increasing STP and reducing the duration of the research and production cycles, this period is gradually reduced.

According to Glazyev, the complex of basic sets of technologically related industries forms the core of the technological structure. Technological innovation, determining the formation of core technological structure called "Key factor." [2]. Leading branches of a device is these industries that intensively use the key factor.

Currently, various researchers in the global techno-economic development allocate five to seven technological structures. Most consider the life cycles of six technological structures (table 1) [4].

Table 1 – Chronology and characteristics of technological structures [4]

The number of the TS and dominance period	The country's leaders	The core of the technological structure	Key factor	The advantages of this technological structures
1 1770–1830	UK, France, Belgium	The textile industry, iron smelting, iron processing, construction of channels, water engine	Textile machine	Mechanization and concentration of production in factories
2 1830–1880	UK, France, Belgium, Germany, USA	Steam engine, railway construction, transportation, machinery manufacturing, steamboat building, coal industry, ferrous metallurgy	Steam engine, machines	The increasing scale and concentration of production through the use of the steam engine
3 1880–1930	Germany, USA, UK, France, Belgium, Switzerland, Netherlands	Electrical heavy engineering, manufacturing and steel rolling, power lines, inorganic chemistry	Electric motor, steel	Increase production flexibility through the use of motor standardization of production.
4 1930–1970	USA, Western Europe, Japan	Automobile construction, tractor construction, nonferrous metallurgy, production of durable goods, synthetics, organic chemistry, production and processing	The internal combustion engine, petrochemistry	Mass and serial production
5 1970–2010	USA, EU, Japan	Electronic engineering, computing, fiber optic technology, software, telecommunications, robotics, production and processing of the gas information services	Microelectronic components	Individualization of production and consumption, increasing production flexibility
6 2010–2050	USA, EU, Japan, Russia (?)	Nanoelectronics, molecular and nanophotonics, nanomaterials and nanostructured coatings, optical nanomaterials, nanoheterogeneous systems, nanobiotechnology.	Nanotechnology Biotechnology	The sharp decline in energy and material intensity of production, designing of materials and organisms with predetermined properties

People management is always based on a combination of theoretical and metodologichni views on understanding and defining the nature, content, objectives, criteria, methods and management principles that form the concept of personnel management in the organization.

Personnel management and human resource management has passed several stages of development following technical, economic and social changes. In general, the stages of this development are presented in table 2.

Table 2. Economic institutions, the technological ways and concepts of personnel management

The number of the TS	The main economic institutions	Organization of production	The concept of personnel management. Model employee	Signs of personnel management
1	Competition of individual entrepreneurs and small firms, their consolidation in partnerships providing cooperation of individual capital	Modernization of production, its concentration in factories	Overall management, lack of specialization in the field of human activity.	The basic object of management - production technology. Support of labor discipline.
2	The concentration of production in large organizations. The development of joint stock companies providing concentration of capital on the principles of limited liability	The increase of production based on mechanization	The concept of scientific management. "Economic man"	Minimization of labour costs. Strict regulation of activities, regulation of labor.
3	Merge of firms, concentration of production in cartels and trusts. The dominance of monopolies and oligopolies. The concentration of financial capital in the banking system. The separation of control from ownership	The growing diversity and flexibility of production, increased product quality, standardization of production, urbanization.	The concept of "human relations". "Psychological man"	Make employee satisfied and he will do. Orientation to small groups. Removing tension. Conflict resolution. The principles of collectivism and loyalty
4	Transnational Corporation, oligopolies in the world market. Vertical integration and concentration of production. Divisional hierarchical control and domination of technostructure in organizations	Mass production of serial products, further standardization of production lines, Mass production of serial production, the further standardization of production, conveyors.	The concept of "organic development". "Professional person".	The involvement of the employee in the firm. Mobilization of all human energy. Qualification of staff. Recognition of the employee's most important assets. The system of social guarantees.
5	International integration of small and medium firms on the basis of information technologies, integration of production and marketing.	The combination of large corporations with small businesses, the impact of government regulations.	The concept of humanization of work "Social man".	The key resource. The growing importance of knowledge. The increase in staff costs. Competition in the labour market. Empowerment by participation of staff in decision making. Partnership.
6	Strategic alliances. Integration structures of business, science and education, technoparks, public private partnership	Large and small business, state regulation.	The concept of intellectual society "A creative person"	Creation and implementation of company's ability to derive economic benefit from knowledge assets, as well as in the continuous renewal of the organizational knowledge, create new core competencies.

Currently, in the economic structure is dominated by the information technological structure in which basic technological aggregates are electronic engineering, computing, fiber optic technology, software, telecommunications, robotics, laser equipment.

At each phase of the life cycle of the technological structure leading role played by certain forces that provide the change and movement of the economy. In

the period of formation of new technological structures of life they are innovators who are the first to implement these innovations and create preconditions for the substitution of the old technological structures at a new. In the growth phase of the TS trajectory of its formation is quite certain, increasing the scale of production, the formation of its technological structure. In this phase the role of innovators decreases, becomes dominant routine

activity of engineers of a wide profile with comprehensive training.

The sixth technological structure is based on the application of nanotechnologies that operate at the level of one-billionth of a meter and is able to change the molecular structure of the substance, giving it a fundamentally new properties, as well as to penetrate into the cellular structure of living organisms, altering them in the right direction. Nowadays the term "nanotechnology" introduced by Japanese scientist Norio Taniguchi in 1974, received wide recognition. Nanotechnologies and nanoproducts have a huge practical potential.

Already seen the key directions of its development: biotechnologies based on the achievements of molecular biology and genetic engineering, nanotechnologies, artificial intelligence systems, global information networks and integrated high-speed transport system. Further development of flexible automation of production, space technologies, production of construction materials with predetermined properties, nuclear industry, air travel.

Projections show that in 2015 the total number of personnel of different sectors of the nanotechnology industry can reach 2 million, and the total value of goods produced with use of nanomaterials, will be at least several hundred billion dollars and possibly closer to 1 trillion \$ [3].

Currently a new technological structure out of the embryonic phase of development. His transition into the growth phase will occur with the completion of the structural crisis of the world economy and the formation of an adequate structure of the economic evaluations. In the sphere of production will be dominated by environmental and waste-free technologies in the sphere of consumption – education, health and information services. Big intellectualization of production requires the implementation of a continuous innovation process in most industries and continuing education in most professions.

The management culture will undergo significant changes. Will be further developed computer-aided design, together with marketing technologies and technological forecasting can go to the automated management of the entire lifecycle of products based on the so-called CALS-technologies, which are becoming the dominant management culture the development of production [6]. CALS (Continuous Acquisition and Life – Cycle Support) is a technology that is used in industrialized countries, which provides a support of information interaction of all participants of product life cycle at all stages with the help of electronic data interchange between designers, manufacturers and consumers. Its application allows to improve the efficiency of production through modeling material, information and financial flows with the aim of choosing the optimal set of processes of production and operation, ensuring the achievement of specified technical and economic parameters and product quality, low cost manufacturing, maintenance and repair.

The rapid development of a common information space entails further globalization of economy, acceleration of interaction partners, promotes the efficient use of knowledge of all participants of economic relations. In the conditions of revolutionary changes in production and information technology is significantly changing people's perceptions about the value of assets. If in the last century the main development resources were tangible assets, then this year is increasingly becoming the people and the knowledge they possess, the intellectual capital and professional competence of employees. The competitiveness of enterprises began to depend on rapid innovation, at the same time, without specialists innovative technologies cannot provide the competitive advantage one organization. The emergence of new technologies, materials, equipment, requires constant and creative use of knowledge, update professional skills. Businesses that have high intellectual capital, and actively use it, will take a leading position in the market.

Knowledge is the ability to apply information to a specific occupation [7].

There are many possible approaches to implementing knowledge management. These approaches can be focused on the relationships of people with each other. They can be formulated on human interactions with information or documentation of information and knowledge. The key to progress lies in our behavior. We all need to distribute their own success and the possibility to constantly learn from others. Today knowledge is the most important asset of organizations. Knowledge is information in context, is able to create inducing to action understanding.

Knowledge management is the systematic processes by which knowledge needed for an organization's success, created, preserved, disseminated and applied; strategy, transforming all kinds of intellectual assets into higher productivity, efficiency and new value [9].

There are many motivations for organizations to effectively manage their knowledge.

Very often in organizations develops a false conception of knowledge management that is based on those management tools that the organization uses at a particular moment. However, this is only one aspect of knowledge management – technology. Document management system and support of the Internet, these are merely tools and just using them is not, in fact, knowledge management. Technology alone cannot solve the problem of knowledge or, for example, to create a certain environment for sharing knowledge. In practice it is much easier to focus on the technical side of knowledge management than to develop a culture of collaboration. Because knowledge directly into the minds of employees, human activity in accordance is the foundation of all. In order to be effective tools of knowledge management, including the use of human and organizational factors, should be fully applied in the daily work.

Knowledge management involves a number of quite stable and unified action. These actions certainly include goal setting, planning, organization, motivation and control, however, these components of management that have become canonical are

implemented on a specific background, which provides for the establishment, preservation, distribution (replication) and application of knowledge (Fig. 1).

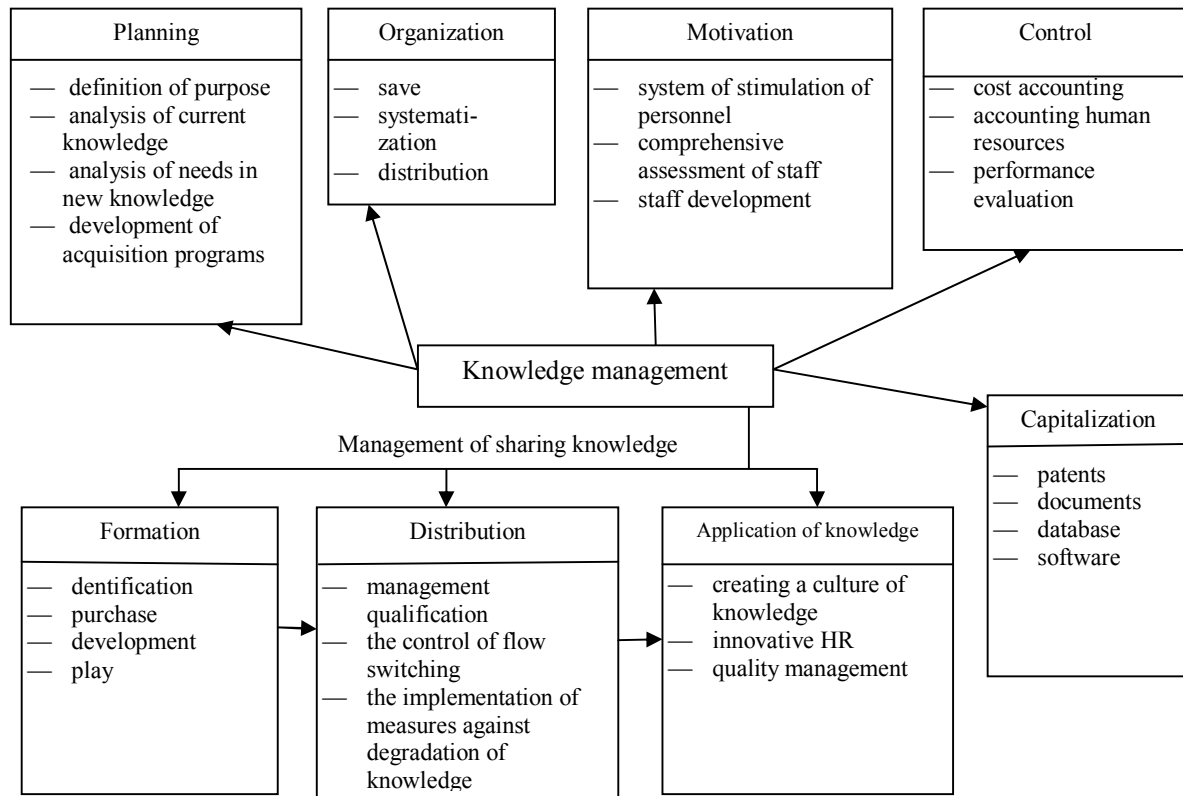


Fig. 1 Knowledge management System

In planning the analysis of current knowledge of the organization, compares them with international standards, are defined the knowledge can't reach to improve the effectiveness and implementation of development strategy. In the formation are determined by internal and external bearers of knowledge, the accumulation of explicit and implicit knowledge necessary to ensure the company's competitive advantages. The acquisition of knowledge - use for the needs of the organization knowledge that already exists in the world, as well In the taxonomy needs to be developed a classification of accumulated knowledge, provided their storage. The distribution of knowledge includes knowledge sharing, both within the organization and beyond, and the transfer of knowledge from more experienced employees to newcomers. This requires the use of new information and telecommunication technologies, appropriate regulation and access to information resources. Capitalization is the embodiment of knowledge in patents, TS, know-how, documents, databases and software that reduces the time and cost to develop products, documents, software, improve business processes of the company.

According to P. Drucker , one of the tasks of modern management is to improve knowledge and innovation and their commercialization, which involves the implementation of knowledge

management in a management system organization and allocation of knowledge management in a separate area of activity of management and employees. Formation of knowledge management systems in organizations allows you to create knowledge, to develop them within the company, to implement in practice.

Becoming the most dynamic component of human capital management, management of knowledge provides the firm with a sustainable competitive advantage. What makes stand competitive advantage in knowledge management? Knowledge, especially resulting from the specific experience of intellectual labor employees. Knowledge tend to be unique and difficult to simulate. Knowledge management methods explores the advantages of using intangible business assets such as experience, knowledge, culture and ability to innovate. The main task of senior management and management based on knowledge in nano-companies, is to create an environment in which employees can fully realize their creative potential, helping the company achieve its goals. Each organization specialized in nanotechnology it is necessary to have a program of implementation of system knowledge. This may include: creating maps of competences jobs; inventory of competencies; identification of training

needs and development; the choice of methods and forms of teaching.

According to the generally accepted view of knowledge management in the near future will pass to the leaders for any company.

Conclusions

The transition to new technological way is inevitable. This requires the macro – motion of socio-economic system of the country on the innovative way of development. This is, primarily, the state support of innovations, legislative measures (especially benefits) that encourage innovation in General and in particular developments in the field of nanotechnology .

At the enterprise level is the use of new dynamic organizational models, a high level of flexibility and adaptation, the formation of innovative teams, instilling in their employees the desire for knowledge, the creation of a learning organization, motivation to achieve goals.

The complexity of modern innovation processes requires training of specialists dealing with various organizational and economic aspects of innovations.

Innovative managers in the first place, should have skills of effective interaction of the leader with the employees of the organization, the creation of work teams, analysis of human behavior, dynamics of structures and relationship [5].

The important point in understanding the essence of knowledge management is the awareness of the role and place of knowledge management in organization management. In modern organizations has significantly increased the role of knowledge in the production of new products and services, knowledge has become the Foundation in creating customer value. The fact that knowledge is the main economic resource leads to the fact that the leaders of the new economy are companies that effectively manage knowledge.

The main task of the enterprise management in the new environment, learn to manage knowledge, make them a source of high productivity, innovation and competitive advantage. In conditions of economic crisis, the use of intelligent building and related professional competence of staff will ensure the survival and economic success..

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