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## FORMALIZATION OF AN INDUSTRIAL ENTERPRISE HUMAN CAPITAL UNDER THE INNOVATION DEVELOPMENT CONDITIONS

**Setting the problem.** The necessity of making the innovative activities of Ukraine's industrial enterprises more active is called upon by the growth of the European integration endeavors because of joining the World Trade Organization. This requires an increase in the competitiveness of indigenous products. The observed increase of the innovative activities of industrial enterprises is related to the change of technologies and purchase of the new equipments. The produce innovations are implemented on a comparatively low level, and this situation is largely accounted for by the current labor market problem of the qualified personnel deficit in industries. The reasons for this are inadequacy of the volumes and quality of the workforce training at the vocational schools as well as the staff decrease at the research organizations and lesser numbers of the qualified personnel engaged in scientific and research and technical work. In line with this, one of the reasons of the personnel's low innovative enthusiasm is the personnel's inadequate motivation for development and innovations.

The value of the notion "human capital" is explained for by the following reasons: in the human capital conception, a person is treated in the integrity of her/his economic, social and individual aspects; in the "human capital" notion, studied in their complex are three groups of qualities and capacities which characterize the person in the process of her/his professional activity: physical, intellectual and psychological; treatment of the person's health, knowledge and abilities as the capital which brings profit and which promotes the need for investments into the person in different segments and on all levels; the "human capital" characterizes a free personality who is a full-fledged personality at the labor market.

**The last research analysis.** The conceptual foundations of the human capital theory are laid out by such foreign researchers as L. Thurow [5], G. Becker [6], T. Shultz [7], H. Bowen [10]. The theoretical and practical aspects of the human capital formalization as an inseparable part of the non-material resources under the innovative development conditions have been treated in the works of the home country and foreign researchers: O. Grishnov [3], P. Kapelyushnikov [9], Robert S. Kaplan, David P. Norton [1], P. Drucker [13] and many others.

The science has approaches to how to manage the separate elements of the human capital under the innovation capital conditions. This does not allow to run the complex regulation of the human capital components for effective mastering and utilization of the innovations.

That is why some questions which are related to formalization and management of the human capital of industrial enterprises remain unsolved and they require further research.

**The aim of the article** lies in defining the essence of the human capital on the basis of generalizing the theoretical and practical approaches to its formalization under the conditions of innovative development.

**The main part.** The rapid growth of the significance of the non-material assets since the end of the last century and up to nowadays is determined first and foremost by the changes at the modern markets. These changes have to do with globalization of economy, increased dynamics of demand, individualization of use and, subsequently, growth of demand for innovative products and services. As a result, information and knowledge become basic factors of production in modern economy while the highest value is given to those assets which have intellectual basis.

Investments into non-material assets came to outweigh those into the material ones, and the emphasis is made on the non-material assets being the most important source of a stable formation of the cost of an enterprise. The foreign [1, p.15] and home country [2, p. 150] authors' research showed that the 40% of the market cost of the company is not reflected in the balance accounts. For enterprises in the high-technology industries, this figure amounts to 50% and more.

At the present stage of economy development, the human capital as a major element of the non-material assets is treated as one of the main components of the strategy for the social development and economic growth. In the developed countries the significance of the human capital as one of the crucial factors of forming a new qualitative level of the society and economy grows up along with an increased influence of education on these processes. The choice priorities in the development of the national education and professional training, increased investments into the personnel will ensure our

country's foremost positions in the world economy [3, p.93]. As follows from the accounts of the State Committee for Statistics, over 300,000 people annually master new professions directly at the working place, in production, which is much more as compared to the qualified personnel released by the vocational schools. At the same time, the worker's qualification is annually upgraded at the working site by over a million people. Such a situation is accounted for not only by inadequacy of the volumes and lines of the vocational school training to the needs of employers but, in the first place, by the fact that a rapid growth of science and technology requires from the people involved in production processes a continuous upgrading of knowledge and skills as well as by the fact that at present the vocational school training covers five hundred professions whereas there are over five thousand professions in production [4, p. 26]. The qualifications are upgraded most effectively by the industrial enterprise workers but the periodicity of qualification upgrading is much lower of the normative one practiced in the European Union countries. The qualification level of a considerable number of the personnel in our country does not meet the needs of the modern production while the system of upgrading the qualifications and education of the personnel requires a further development and improvement on the basis of the foreign countries experience [4, p. 27].

Thus the labor market trends affect the innovative activities of enterprises and the opposite influence is also true. Experience shows that active innovative activities shape the need in the qualified personnel whereas reductions in the numbers of the research design-and technology personnel have a negative effect on the innovative development of enterprises. Despite the imbalance of demand and supply at the labor market there is a more active utilization of the innovative products in 2010 all over the industry. As compared with 2010, the specific weight of the innovative enterprises increased in 2011 by 0.8 %, which is accounted for by introduction of the new technological processes and machinery.

One of the factors that contributed to the increase in the number of product innovations is a strategic correspondence of creating cost from the non-material assets. Fig. 1 shows a process of creating cost from the non-material assets under the innovation development conditions.

A special place among the three kinds of the non-material assets belongs to the human capital.

There are many definitions of the "human capital". Below are a few of them.

In L. Thurow's treatment, the human capital incorporates "productive abilities, endowments and knowledge" [5, p.15]. G. Becker gives another definition of this notion: "the human capital is formed at the expense of investments into a person, among which there are investments into education, training at the production site, expenses on health protection, migration

and a search for information about prices and profits" [6, p.5].

T. Shultz and E. Dolan and D. Lindsay give a similar definition of the human capital. T. Shultz: it is development of knowledge and capacities due to "school education, training at the work site, strengthening of health and the growing reserve of the economic information" [7, p. 64-65]; E. Dolan and D. Lindsay: the human capital is a form of mental abilities which are obtained due to "... formal study, education or on the basis of the practical experience" [8, p.256].

These definitions of the human have a similarity to the definitions of the labor potential. However, in the definitions that will follow a basic purpose of the human capital is revealed, namely to produce goods and provide services, bring bargain and profits.

Thus, P.I. Kapelyushnikov treats the human capital as "stock of knowledge capacities and motivations which everybody has ... and ... which make up the capital as their formation requires the diversion of funds at the expense of the current expenditures, but at the same time they become a source of increase of productivity and earnings in the future" [9, p.4].

With Bowen H.R., the human capital "is made up of the acquired knowledge, habits, motivation and energy with which human beings are endowed and which can be used during a certain time for the purpose of producing goods and providing services" [10, p. 362].

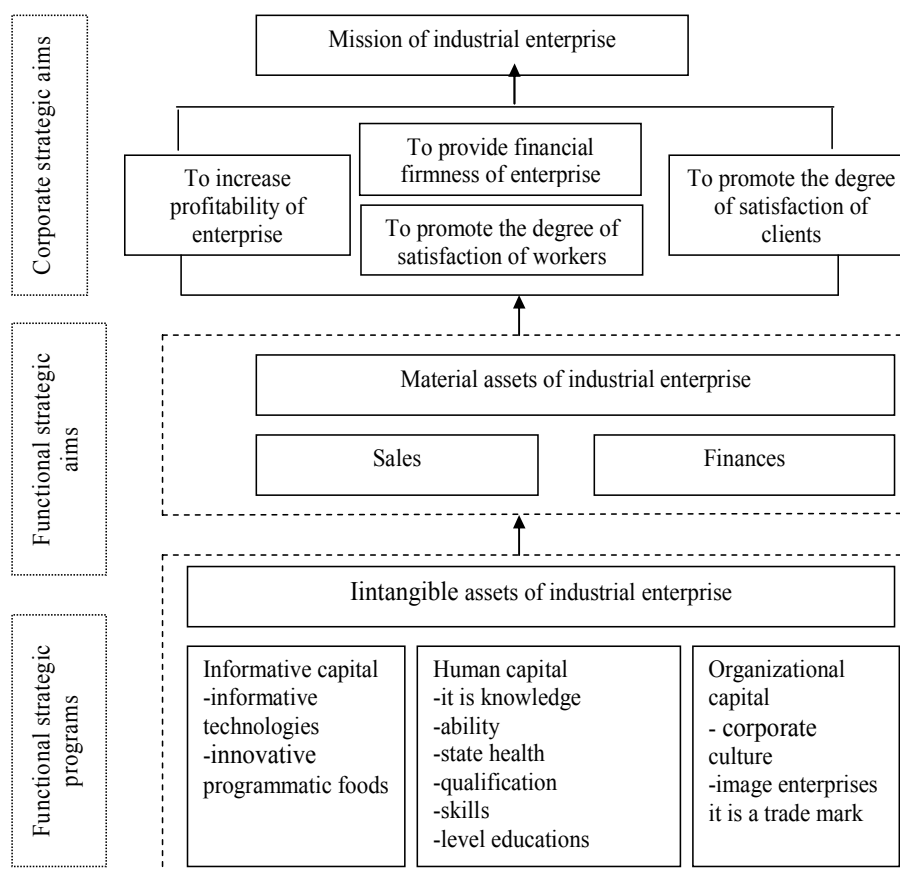
In the paper written by V. Kutsenko and M. Yevtushenko, the human capital is "a sum total of knowledge, capacities and qualifications, as an ability of the qualified workforce to create profit as part of wages and profit of the enterprises" [11, p.136].

In S. Dyatlov's opinion, "The human capital is a certain accumulated stock of health, knowledge, habits, abilities, motivations which is formed in the result of investments; this stock is purposefully used in that or other sphere of social production and it fosters the productivity labor increase thus bringing about increase of incomes (earnings) of a given person" [12, p. 83].

One can say, analyzing the aforesaid definitions of the human capital, that the human capital is a totality of a person's individual intellectual potentials in the kind of the non-alienated competencies (knowledge, crafts, skills), it represents an interrelation of all the components of the human capital with the strategy which, in its turn, ensures an enlargement of the cost of an enterprise.

Today an absolutely new level of the workers' competence is urgently required, it will allow to remove a gap between the operational activities of enterprises and their strategic guidelines.

A classic in the field of strategic management P. Drucker maintains that today and at least during the next decade the greatest problem facing enterprises will be adaptation to the shift from industrial economy to the economy based on knowledge.



**Fig. 1. The process of creating cost from the non-material assets under the innovation development conditions [the authors' creation ]**

The workers' knowledge as a differential factor touches upon all the aspects of management comprising strategic effectiveness, marketing, organization structure and investments into the human capital. Each of these, directly or indirectly but always essentially, depends on understanding of the people's ability to cope with unforeseen, global and rapid changes.

The human capital as an employer of information technology happens to be a crucial condition for effective management of the enterprise knowledge which creates the cost in keeping with the strategic aims of the enterprise [13, p.143].

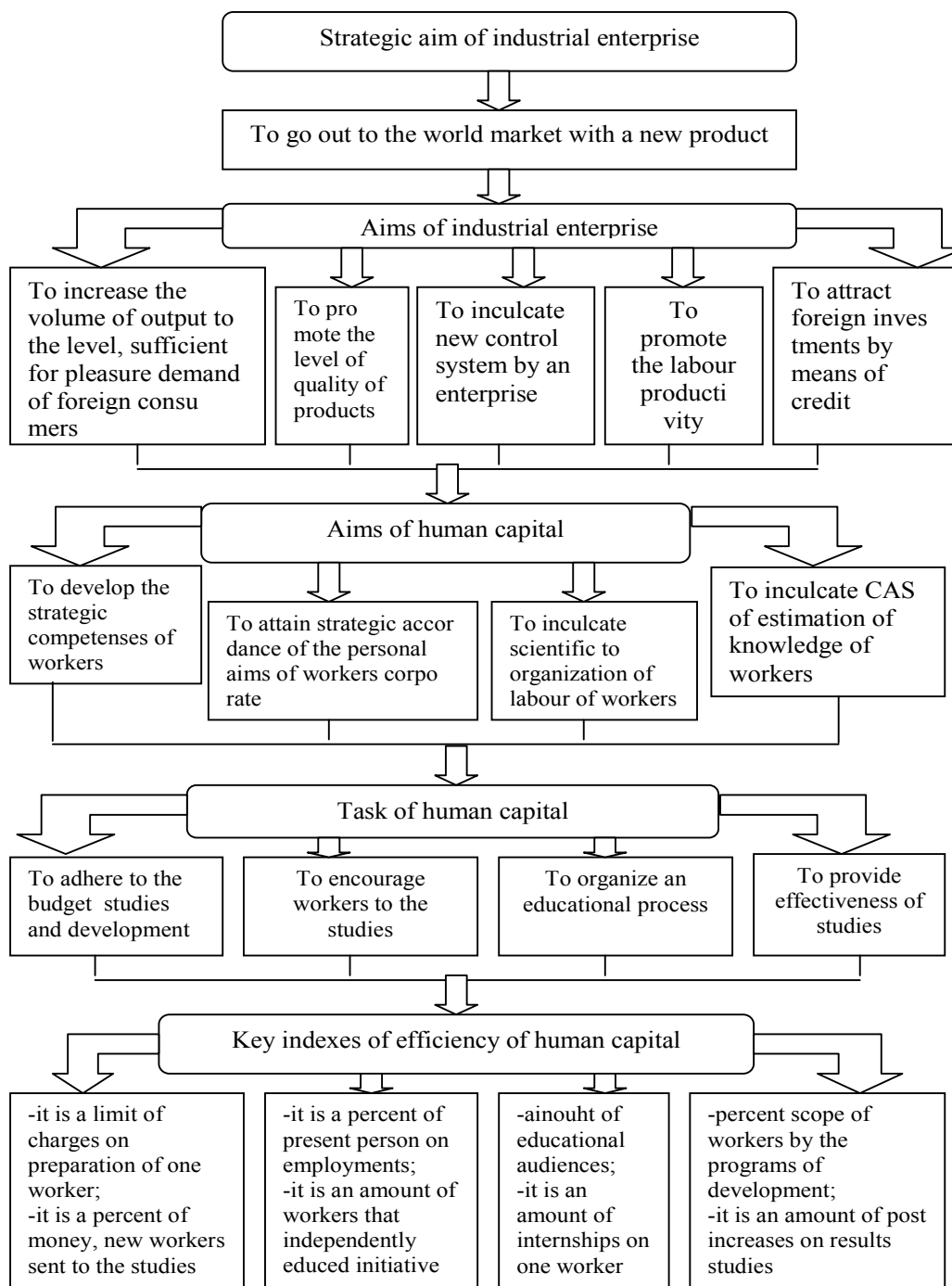
To formulate the human capital aims in a proper way it is necessary to have a clear notion about the kinds of competencies which foster the fulfillment of the key internal business processes of the enterprise. The description of the given competencies will allow to form the groups of the most valuable provisions in the process of the strategy realization as well as to estimate all discrepancies between the future needs of the enterprise and existing reality. The removal of these discrepancies is made possible by way of training or by way of hiring co-workers who possess the required skills. Further, on the basis of the human capital aims, particular tasks are ascertained according to which the key indicators of effectiveness will be defined. The key indicators of effec-

tiveness are the quantitatively defined financial and non-financial parameters which show to what extent an effective enterprise reaches the goals set within the framework of the general strategy.

The key indicators of effectiveness are applied both as an instrument of the financial motivation and for assessment of a given worker's performance in comparison with other workers (by the target values of indicators). Their orientation on the strategy allows to concentrate the worker's effort on achieving the strategically important indicators of the enterprise, achieving them will demonstrate the worker's personal contribution into the strategy realization. In Fig. 2, a map of goals and tasks of the human capital under the conditions of an industrial enterprise innovative development is shown.

On the basis of the individually elaborated indicators of the human capital effectiveness as well as the subsequent comparison of the planned and factual data the managers get the information which enables them to make an assessment of the effectiveness of realization of the industrial enterprise corporate strategy.

In our case, these are the indicators of the employee turnover among those workers who undertook training, the general indicators of the workers' satisfaction with the training results, the average score by the final examination etc.



**Fig. 2. Map of goals and tasks of the human capital under the conditions of an industrial enterprise innovative development [the authors' creation]**

On the basis of the individually elaborated indicators of effectiveness, the human capital solves all these problems by way of taking over control of the key processes, strengthening the feedback (effect of the outer environment on the factors of the enterprise activities) with the help of transposing a vision into strategy, expanding communications and links of the enterprise with the outer environment, carrying out business planning.

It is established that the said operations can be performed by the trained qualified personnel who employ

in their practice a creative style and innovative possibilities of the working activity as a form of the human capital functioning.

**Conclusions.** The analysis of the given research results shows that under the conditions of forming the knowledge economy the enterprise personnel has to be treated as the human capital, whose accumulation allows to increase the competitiveness of enterprises at the expense of making their innovative performance more active. This will enable examining not only the personnel qualification level but also other levels, those which

characterize the innovative activity of such elements of the human capital as abilities, motivations, mobility and health condition.

The methodological approach to regulation of the human capital elements under the innovation development conditions has been improved. To this end, the map of goals of the human capital of an industrial enterprise has been elaborated. For the correct formulation of the human capital goals / aims it is necessary to have a clear notion about the kinds of competencies which foster the fulfillment of the key internal business processes of the enterprise. The description of the given competencies will allow to form the groups of the most valuable provisions in the process of the strategy realization as well as to estimate all discrepancies between the future needs of the enterprise and existing reality. The removal of these discrepancies is made possible by way of training or by way of hiring co-workers who possess the required skills. Realization of the proposed approach is aimed at increasing the effectiveness of the enterprise's innovative activities by way of the quick-response correcting of the human capital elements in keeping with the corporate strategy of the enterprise.

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**Берсуцька С. Я., Каменська О. О.** Формалізація людського капіталу промислового підприємства в умовах інноваційного розвитку

У статті на підставі результатів дослідження удосконалено методичний підхід до регулювання елементів людського капіталу в умовах інноваційного розвитку. Для цього сформована карта цілей людського капіталу промислового підприємства. Реалізація запропонованого підходу спрямована на підвищення ефективності інноваційної діяльності підприємства за рахунок оперативного коректування елементів людського капіталу відповідно до корпоративної стратегії підприємства.

*Ключові слова:* нематеріальні активи, інноваційний розвиток, людський капітал, ключові показники ефективності, корпоративна стратегія, нефінансові параметри.

**Берсуцкая С. Я. Каменская О. А.** Формализация человеческого капитала промышленного предприятия в условиях инновационного развития

В статье на основании результатов исследования усовершенствован методический подход по регулированию элементов человеческого капитала в условиях инновационного развития. Для этого сформирована карта целей человеческого капитала промышленного предприятия. Реализация предложенного подхода направлена на повышение эффективности инновационной деятельности предприятия за счет оперативного корректирования элементов человеческого капитала согласно корпоративной стратегии предприятия.

*Ключевые слова:* нематериальные активы, инновационное развитие, человеческий капитал, ключевые показатели эффективности, корпоративная стратегия, нефинансовые параметры.

**Bersutska S., Kamenska O.** Formalization of an Industrial Enterprise Human Capital under the Innovation Development Conditions

In the article on the basis of research results improved methodological approach to regulate the elements of human capital in terms of innovative development. For the purposes of this form a map of the human capital of an industrial enterprise. Implementing the proposed approach is aimed at improving the efficiency of innovative activity of the enterprise due to operational adjustment elements of the human capital under the corporate strategy of the enterprise.

*Keywords:* intangible assets, innovative development, human capital, key performance indicators, corporate strategy, non-financial parameters.

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