

**STUDY MOTIVES OF EMPLOYEES IN THE INNOVATION ACTIVITY AS A BASIS
OF HUMAN CAPITAL AT ENTERPRISES OF MILITARY-INDUSTRIAL COMPLEX**

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The priority of the military-industrial complex (MIC) in the economy of the Russian Federation is determined by the role of the defense industry in the technical and technological modernization of economy rather than by the magnitude of military production. Organizing high-technology and competitive production is possible only on condition that MIC is provided with qualified employees who possess high intellectual and creative potential. At the same time, the requirements for the management mechanisms relating to the formation and development of human capital are increased either.

The paper presents the results of a study of one of the subsystems of human capital management, which is the system of motivation and stimulation of employees' innovative activity. The study was conducted at a large enterprise of military-industrial complex Open Joint Stock Company "Krasnoyarsk Machine-Building Plant" by an anonymous survey of employees. The respondents included managers, specialists and workers. The aim of the study is to investigate the motives of employees for innovative activity and organizational and managerial factors of stimulation.

The results show that material factors and motives largely affect the innovative activity of employees. As a results of the survey, it was also found that additional measures are needed to create a favourable environment for innovative activity, mainly by removing barriers associated with financing and organizing innovative activity.

The results received in the survey enable the company administration to adjust the applied tools and methods of the system of motivation and stimulation of employees' innovative activity to improve its efficiency, which subsequently leads to the development of innovative activity at an enterprise. The formulated principles allow to form a system of motivation and stimulation of innovative activity, focusing on the development of human capital at enterprises of MIC.

Keywords: motivation of innovative activity, human capital at an enterprise, employees of the military-industrial complex.

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**ИССЛЕДОВАНИЕ МОТИВОВ ИННОВАЦИОННОЙ ДЕЯТЕЛЬНОСТИ РАБОТНИКОВ
КАК ОСНОВА ЧЕЛОВЕЧЕСКОГО КАПИТАЛА ПРЕДПРИЯТИЙ
ОБОРОННО-ПРОМЫШЛЕННОГО КОМПЛЕКСА**

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Приоритетность оборонно-промышленного комплекса (ОПК) в экономике Российской Федерации определяется не столько масштабом военного производства, сколько ролью ОПК в технической и технологической модернизации экономики. Организация высокотехнологичного, конкурентоспособного производства возможна только при условии обеспечения ОПК квалифицированными работниками, обладающими высоким интеллектуальным и творческим потенциалом. При этом повышаются требования к управленческим механизмам, связанные с формированием и развитием человеческого капитала.

Приведены результаты исследования одной из подсистем управления человеческим капиталом – системы мотивации и стимулирования инновационной деятельности работников. Исследование проводилось на крупном предприятии оборонно-промышленного комплекса – открытом акционерном обществе «Красноярский машиностроительный завод», путем анонимного анкетирования работников. В число респондентов вошли руководители, специалисты и рабочие. Целью исследования являлось изучение мотивов работников инновационной деятельности и организационно-управленческих факторов стимулирования.

Результаты исследования показали, что материальные факторы и мотивы в значительной степени влияют на инновационную деятельность работников. Также по результатам анкетирования было выявлено, что необходимы дополнительные меры по созданию благоприятных условий для осуществления инновационной деятельности работников, главным образом путем устранения препятствий, связанных с финансированием и организацией инновационной деятельности.

Полученные результаты позволят руководству предприятия скорректировать применяемые инструменты и методы системы мотивации и стимулирования работников для повышения ее эффективности, которые в дальнейшем приведут к развитию инновационной деятельности предприятия. Сформулированные принципы позволят сформировать систему мотивации и стимулирования инновационной деятельности, ориентируясь на развитие человеческого капитала предприятий ОПК.

Ключевые слова: мотивация инновационной деятельности, человеческий капитал предприятия, работники оборонно-промышленного комплекса.

Technological modernization of Russian economy and increase in its competitiveness on the basis of advanced technologies requires the development of innovative activity at enterprises [1–3]. Innovative activity appears at the intersection of economic and social dimensions, each of which has an impact on businesses in the changing environment.

At the moment in the period of transition of military-industrial complex (MIC) to innovative economy, employees as creators and implementers of innovation come to the front [4]. The human capital becomes the main resource of innovative development, which is considered as “a resource of knowledge, abilities and motivations possessed by everyone” [5; 6].

To preserve and develop the human capital MIC enterprises need to find a special approach to the formation mechanisms of motivation and stimulation that correspond to the modern conditions of functioning of MIC enterprises and provide favorable and successful development of the human capital.

Existing motivation systems at enterprises are often aimed at improving the efficiency of employees, while in the innovative economy the system of motivation and stimulation should focus on the development of professional and personal abilities [7; 8]. Continuous development of such elements of human capital, as creativity, intellectual ability and professional competence lead to the regular development and implementation of innovation, which is an evidence of effective innovative activity at an enterprise.

While forming the system of motivation and stimulation, it is important to have a systematic understanding of the effectiveness of practical tools and techniques applied, on the one hand, and the motives that encourage employees to innovate, on the other hand [9; 10]. To solve this problem, we conducted a research, the aim of which was to study the motives of innovative activity of employees at MIC enterprises and managerial and organizational factors of stimulation. The objectives of the study are:

- 1) the analysis of conditions created at an enterprise to promote innovation;
- 2) to identify internal and external barriers for innovative activity;
- 3) to determine the structure of employees' motives encouraging them to participate in innovative activities;
- 4) to identify factors that motivate employees to innovate.

Employees of Open Joint Stock Company “Krasnoyarsk Machine-Building Plant” took part in an anonymous survey [based on sources 11–13] (JSC “Kras-mash”), 36 % of the participants are managers, 52 % of specialists, 12 % of workers. The average age of employees is 30 years, 50 % of respondents are under the age of 30, 36 % of respondents are between 30 and 35 years

old, 8 % of respondents are 36 to 46 years old and 4 % of respondents are 47 to 55 years old. The largest number of respondents has been working at the enterprise for a period of up to 10 years, 34 % of respondents have work experience of 5 years, 42 % of respondents have work experience from 5 to 10 years.

The analysis of results of the first block of the research shows that employees evaluate the conditions of the enterprise for the development of innovative activity positively: 60 % of respondents believe that the company has appropriate conditions. At the same time, half of the employees surveyed (52 %) state that the products being currently released by the enterprise are new to it, but do not contain novelty on the scale of the country or the world. To change the situation and to realize the innovative potential of the enterprise, it is necessary to consider the fact that 80 % of the respondents feel ready for the development of innovations. At the same time, 88 % of employees surveyed display interest in innovation in technical activities.

The perception of innovation by the respondents was further analyzed. As a result of the survey the respondents have been divided into 5 groups (fig. 1).

The first group includes employees who are obsessed with innovations, are constantly interested in them, always perceive them first, feel free to innovate and take risks. The second group consists of employees who are interested in innovations, but do not implement them “blindly”, consider the practicability of innovations. This group of workers believes that innovations should be introduced as soon as they have been successfully tested in conditions similar to those existing at an enterprise. The third group consists of employees who perceive innovations moderately, do not aspire to be among the first, but do not want to be among the latter. Employees of this group perceive the new as soon as it is perceived by most of the team. The fourth group includes employees who challenge innovations, prefer the old, and perceive the new when it is accepted by the majority of employees. The fifth group includes employees who are the last to master innovations, doubt innovators and initiators of innovation.

The predominant majority of the employees surveyed have a rational attitude to innovations, so 56 % of the respondents believe that it is necessary to consider the practicability of innovations, 34 % of the respondents perceive innovations when they are perceived by the majority of workers, only 6 % of the respondents are always interested in innovations, boldly implementing them in their activities. Thus, the enterprise should improve the conditions for exposure and development of employees' innovative potential, support leading innovators and create the database for storage and exchange of innovative ideas.

The results of the second block of studies aimed at identifying internal and external barriers for innovative activity enable to determine the difficulty of attracting financial resources for the implementation of innovative projects as the main external barrier for innovative activity; this item has been chosen by 48 % of respondents. Not to mention the fact that lack of financial resources is a key constraint for increasing innovative activity of enterprises in all fields of industry [13]. According to the respondents, the second most important external barrier is a long payback period of innovations (32 %). Actually, it takes a longtime to transfer ideas into innovations, and then it takes time for innovations to start to return interest.

Despite the general positive assessment of conditions for the development of innovative activity at the enterprise, employees indicate the presence of internal barriers:

the first barrier is imperfection of the system of individual support of innovative activity (46 % of respondents), and the second barrier is lack of clear mechanisms for implementing innovations (44 % of respondents). The opinion of employees about the third significant barrier is not unanimous: the managers (20 %) emphasize the low scientific and technological potential of employees, while specialists (43 %) indicate the rejection of employees' innovative activity by heads of the departments. Therefore, it is necessary to find a compromise solution to increase employees' potential and managers' interest in employees' innovative activity.

Another objective of the study is to determine the motives of employees' innovative activity. Fig. 2 shows the data about motives encouraging different categories of employees to innovate.

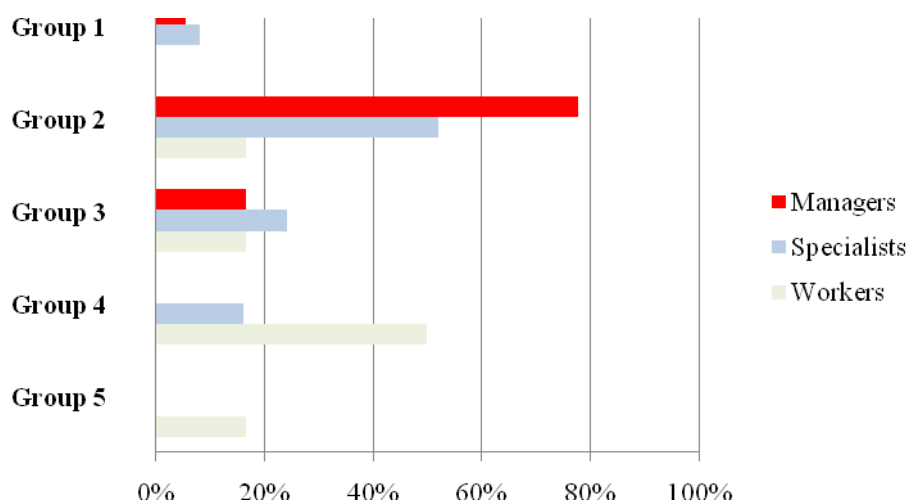


Fig. 1. Distribution of categories of workers according to their perception of innovation

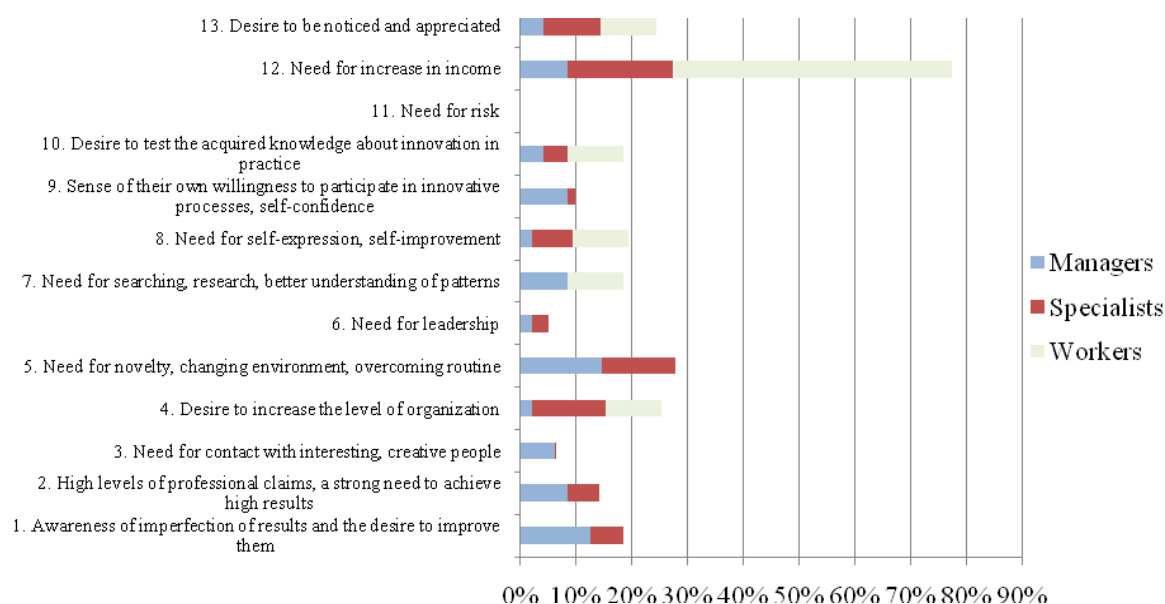


Fig. 2. Structure of the motives of innovation workers

The main motives are increase in income (44 % of all employees surveyed have chosen this point), the need for contact with interesting, creative people and a desire to raise the level of the enterprise (42 % and 38 %, respectively). The results of the study confirm the fact that material well-being is the most important motive in the structure of employees' motives regardless of types of activity.

However, the analysis of motives of innovative activity according to various categories of employees shows that the structure of motives of managers, specialists and workers differ from each other. Managers are driven by the desire to raise the level of the organization in the implementation of innovation (56 % of managers have chosen this point), the need for novelty, change of the environment, overcoming routine (39 %), awareness of imperfection of results and desire to improve them (33 %). Specialists have noted the importance of such motives as increase in income (50 %) and the need for contact with interesting, creative people (46 %). Workers view material factors as the most important, 50 % of workers have chosen such motive as increase in income (50 %).

The difference of opinion about the motives of innovation of leaders, specialists and workers takes place due to the presence of different purposes in the workplace, personal life, as well as the difference of opportunities offered to the representatives of different categories of employees according to the results of innovative activity [14; 15].

The results of the study of factors affecting employees' motivation to innovate show agreement of opinion among all categories of employees on the significance of the level of income (90 % of respondents chose this item), career opportunities (70 %), comfortable working conditions (50 %). Thus, these factors have much more influence on the activation of employees' innovative activity than other factors: the possibility of self-realization, recognition, increased powers, etc. (see table).

At the same time, there are differences in the importance of factors for different categories of employees. Innovative activity of managers is influenced by the opportunity for self-realization (4.3 points), gaining recognition, as sense of importance at an enterprise (4.3), increasing the level of income (3.9), an opportunity for professional development (3.6). Specialists emphasize the importance of increasing the level of income (4.7), opportunities to manage others (4.5), opportunities for professional development (4.1), career prospects (3.6). The important factors of innovative activity for workers are increasing the level of income (5), an opportunity to get additional financial support (4.3), an ability to work flexible hours (4). The results of the study on factors that affect motivation of employees' innovative activity should be considered while improving the system of motivation and stimulation of innovative activity.

Table

Factors motivating employees to innovate

Factors	Number of respondents				Significance			
	Managers	Specialists	Workers	Total	Managers	Specialists	Workers	Total
The level of income (wages)	17	22	6	45 (90 %)	3,9	4,7	5	4,5
Proximity of work to the place of living	5	10	3	18 (36 %)	2,6	2,8	3	2,8
Career prospects	9	12	1	22 (44 %)	3,3	3,6	3	3,3
Opportunity for professional development	16	17	2	35 (70 %)	3,6	4,1	2	3,2
Opportunity to get loans	2	3	3	8 (16 %)	2,5	2,7	4,3	3,2
Opportunity to manage others	–	2	1	3 (6 %)	–	4,5	1	1,8
Education at the expense of the enterprise	2	3	2	7 (14 %)	1	1,7	3	1,9
Great powers	1	1	2	4 (8 %)	1	2	3	2
Flexible working hours	–	3	1	4 (8 %)				
Opportunity for self-realization	7	10	2	19 (38 %)	4,3	3	3	3,4
Comfortable working conditions	9	12	4	25 (50 %)	2,6	2,6	2,8	2,7
Fixed working day	4	8	–	12 (24 %)	3,3	2,6	–	2
Relationship with immediate supervisor	5	6	1	12 (24 %)	3,4	2,3	1	2,2
Recognition, a sense of the importance at the enterprise	9	7	1	17 (34 %)	4,3	2,1	1	2,5
Job by function, in accordance with the education received	4	6	–	10 (20 %)	2	1,8	–	1,3
Work for the sake of communication, the ability to occupy free time			1	1 (2 %)	–	–	2	0,7

The study allows the authors to formulate the following principles of forming the system of motivation and stimulation of innovative activity as a basis of the human capital at enterprises of the military-industrial complex:

- the principle of differentiation of stimulating programs according to categories of employees;
- the principle of identity of the proposed stimuli with the predominant motives for innovative activity;
- the principle of priority of stimuli aimed at such motives as self-development, professional development, self-realization of employees;
- the principle of maximizing support and involvement of employees with high innovative potential;
- the principle of interconnection between the system of motivation and stimulation of innovative activity of employees and high innovative potential;
- the principle of monitoring the effectiveness of the proposed system of motivation and stimulation in conjunction with the human capital of the enterprise.

To sum it up, it is necessary to carry out purposeful work for improving the system of motivation and stimulation of employees' innovative activity at enterprises of MIC in order to form, develop and preserve the human capital, as creative and intellectual abilities and professional competence of employees formed in the process of innovative activity in modern conditions contribute to the development of the enterprise and industry on the whole.

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