Innovative technologies of personnel management of industrial enterprises in terms of introducing professional standards

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Abstract. The article is devoted to the problems of developing and adapting innovative personnel management technologies in the process of introducing professional standards. The authors dwell on innovative personnel technologies from the point of view of applying new methods and tools to the work of personnel, as well as the way these methods affect the increase in work efficiency. The article points out the main difficulties in introducing personnel innovations. The authors determine levels of adapting personnel technologies at Russian industrial enterprises to the system of professional standards. Increase in work efficiency is to become one of the final indicators of successful introducing the system of national qualifications. Taking into consideration the results of the rating published in the analytical periodical Market Watch, the authors make an attempt to make a comparative analysis of Russia and other countries of the world in terms of work efficiency indicator. The article analyses the attitude of chief executives and HR-managers at industrial enterprises to the idea of introducing professional standards. The authors distinguish the main problems of introducing professional standards into the practical activity of Russian industrial enterprises. The authors come to the conclusion that the search of various innovative personnel technologies at industrial enterprises is necessary for successful functioning of the created system of professional standards.

1. Introduction

The topicality of the problem under analysis is determined by a number of factors and circumstances. Firstly, working out professional standards has been actively introduced into practice in Russia since 2012. Though the first attempts of transition to the already developed world system of professional standards were made in 2007 at the initiative of employers. Consequently, since 2012 the development of personnel technologies has been connected with reorganization of personnel management policy at enterprises, as well as search and use of personnel technologies which require additional research in terms of adapting to the newly introduced system of professional standards.

Secondly, according to the estimates given by chief executives and HR-managers, personnel innovations can be effective and adapted to the system of professional standards only partially, which determines the topicality of the problem under analysis.

Thirdly, introducing professional standards calls for the increase in efficiency of personnel management processes connected with understanding employees’ needs and their motivation to continuous development.

Thus, research, development and adaptation of personnel innovations to the practice of introducing professional standards predetermines the topicality of our analysis.

2. Research methodology

Personnel technologies (HR-technologies, human resources technologies) is the term integrating various business functions connected with management of human resources in any institution. They
include selection and hiring of personnel, motivation of employees, social protection of personnel, its development, analytical activity, training and competence management.

The methodology of human resource management distinguishes between two types of personnel technologies: traditional and innovative. Innovative personnel technologies assume application of new methods and tools in personnel management and are aimed at increasing labour efficiency.

Innovative personnel technologies are personnel management innovations connected with practical use of unconventional solutions and risk and aimed at creating and realizing competitive advantage (benefit), which will predetermine their further field and cross-field diffusion in the market.

Introducing professional standards into practical activity of organizations is impossible without innovations in personnel management. However, innovations, including personnel innovations, are always connected with something new and unconventional. Therefore, their introduction is accompanied by certain difficulties.

1. Innovations in personnel management system always lead to gaps in conventional behavior, criteria and management structure, which leads to more tangible manifestation of the phenomenon of resistance to changes, than it happens during the introduction of material innovations.

2. It is more difficult to present economic justification of personnel innovations, as it is necessary to compare costs of their introduction with estimated results, and the result of personnel innovations often has a more multidimensional and hardly changeable character.

3. On the one hand, personnel innovations require fewer resource expenses in terms of time consuming and financing. They are usually carried out with fewer one-time costs, but on the other hand, they can significantly affect the financial performance of the organization and thus can have a negative effect.

4. Uniqueness of human capital of the institution in the process of diffusion of personnel innovations requires their adaptation to its specific character.

Today, traditional procedures of hiring, selection and performance assessment of the organization can be complemented with innovative techniques of distinguishing motivational factors and leadership skills. Vocational training programs can be supplemented by innovative techniques of identifying the leading source of perception in the course of training. Under the conditions of introducing professional standards, innovative technologies of personnel management are to be focused on the development of intellectual component on the basis of parametical and structural transformation of inner competences and motivations of employees.

Therefore, it is important to manage employees, their knowledge and competences in such a way that the organization can build a long-term competitive advantage [1].

Consequently, it is necessary to model such intraorganizational developing environment in which readiness for changes is perceived as an attribute of development.

Major employing organizations, in the person of their chief executives and HR-managers were used by us as respondents in our research. The sampled population was costituted by 196 industrial Russian enterprises which appeared in the rating of RAEX-600 (based on the volume of output) in 2017 [2].

Defining the level of adapting personnel technologies to the system of national qualifications (SNQ) was carried out on a five-point scale: 1 – not adapted; 2 - adapted to low; 3- not fully adapted; 4 – implemented at a sufficient level, but requires improvement; 5 – fully adapted.

**Table 1. Summary table of assessing the adaptation level of personnel technologies to SNQ**

| Name of personnel technology | Total score |
|-----------------------------|-------------|
| Selection and admission of new employees | 3.7 |
| Staff motivation             | 2.3         |
| Development of staff         | 2.4         |
| Personnel assessment         | 3.1         |
The results of the conducted survey showed that two of the six personnel technologies offered to assessment "are adapted to low" and three of them "are not fully adapted". Also, only selective and enrolling technologies are at a stage of adaptation to the existing professional standards at the moment, though they require improvement as well. None of personnel technologies is not fully implemented in terms of adaptation to the system of national qualifications.

A consolidated assessment of the adaptation of personnel technologies at Russian industrial enterprises to the SNQ is presented in chart 1.

![Chart showing the adaptation levels of personnel technologies](chart.png)

**Figure 1.** Summary assessment of the adaptation of personnel technologies at Russian industrial enterprises to the system of national qualifications

The received results showed that personnel technologies at Russian industrial enterprises are not implemented to the right degree, taking into account a large number of currently existing approved professional standards. However, it is the adaptation of personnel technologies of organizations to the system of national qualifications that constitutes one of fundamental elements of effective functioning of any system.

The increase in labor productivity is to become one of the resulting indicators of introducing the system of national qualifications. In Russia, as well as in many countries of Europe, there exists a complicated demographic situation which is characterized by decrease in number of able-bodied population. But unlike the countries of Europe, in Russia it is accompanied by low labor productivity. Developing and introducing the national system of qualifications is to promote increase in labor productivity by vocational training of labor force. However, in Russia we still have the lowest labor productivity in Europe.

The analytical periodical Market Watch made the rating of labor productivity. In 2016 Russia took the 32nd place [3]. But in 2017, Russian economy became even less productive and Russia dropped to the 34th place in the ranking. Experts predict a continuation of the downward trend in 2018-2019 (table 2).

At the same time the majority of the countries have much shorter working weeks than in Russia. So, in France, the Netherlands and Germany we can see the shortest week - 26 hours. Russia works 1914 hours a year, this indicator is higher only in Costa Rica, South Korea, Greece and Mexico.

| Year | Rank | Country          | Annual GDP per capita | Annual Hours Worked | Productivity Per Person Per Hour | Productivity Per Person Per Day | Productivity Per Person Per Per |
|------|------|------------------|-----------------------|---------------------|---------------------------------|---------------------------------|---------------------------------|
| 2016 |      |                  |                       |                     |                                 |                                 |                                 |
| 2017 |      |                  |                       |                     |                                 |                                 |                                 |

**Table 2.** Labor productivity rating according to the analytical publication Market Watch.
3. Results of research

It remains an open question, whether introducing professional standards will result in increase of labor productivity through professional development of personnel. Unfortunately, currently there are too many unresolved problems in the economy of Russia.

Capacity of Russian industrial enterprises to increase their productivity calls for effective organization of production processes, modernization and technical reorganization. Heads of the industrial enterprises consider these tasks their top priority.

Hence, we observe the minimum attention to the problem of introducing professional standards to the practice. "It is possible to bring a horse to a watering place, but it is impossible to force it to drink". Today, the competitiveness of Russian industrial enterprises is based not on qualifications, but on totally different parameters.

There is an opinion that introducing professional standards to the practical activity of enterprises can also produce a negative effect. Today the state remains the main customer and the main regulator of the system of national qualifications. Yet, implementing professional standards did not become a
priority task for industrial enterprises and consequently did not lead to the emergence of innovative personnel technologies.

The state, certainly, has to act as an attractor in creating and developing similar systems. In Australia there is a signed agreement between the government and employers on the need of reducing the quantity of laborforce without proper qualifications from 47.1% to 23.6% by 2020. In Vietnam there exists a planned target to increase the share of workers possessing technical certificates and diplomas up to 23% by 2020.

The priority purpose of creating the system of national qualifications is achieving the maximum possible compliance of a product of the system of professional education with the needs of employers. Today in the course of professional staff training of estimation of framed competences according to the accepted federal state educational and professional standards is carried out. But here again we are to face the question of reliability and objectivity of the used means of estimation, including those made by employers. Partially this question will be solved after developing the network of independent certification centers.

There is a question of obligatory application of professional standards. So, in the countries of the European Union, about 20% of jobs require certification, accreditation or licensing of the employee. In Great Britain this indicator is slightly higher than the average European one and constitutes 30%.

In Russia processes of introducing professional standards into practical activity began quite a long time ago, but according to the results of our research, employers are not active enough in their implementation. The employers cannot cope with the role of the intermediary between the system of professional education and labor market so far. Many employers in different sectors of industry consider the model of "corporative" standards their first priority. The replies to the question "Do you support the idea of Introduction of professional standards?" were distributed as follows (chart 2).

![Figure 2](image)

*Figure 2. Attitude of heads and specialists of HR departments of the industrial enterprises towards the idea of introduction of professional standards*

Nevertheless, despite the contradictory attitude of employers to introducing professional standards, they became an objective reality that, of course, demands a totally different approach to personnel technologies. It refers to the formation of innovative personnel management on the basis of so called “knowledge-relevant” approach which assumes operational aspect of mastering knowledge and skills.

A large number of articles is devoted to this problem. The article «Strategic HRM Practices & their impact on company performance in Chinese enterprises» describes the trends in the development of personnel management in Chinese enterprises and their impact on the effectiveness of their activities (Akhtar S R Ding D Z & Ge G L 2008) [4]. Becker B E and Huselid M A also emphasize the importance of differentiated HR architecture not only between firms but also within firms [6]. The influence of the social environment on the functioning of high-tech systems is presented in the work «High-performance work systems and organizational performance: The mediating role of internal
social structure» (Evans W R & Davis W D 2005) [7]. The development of human resource management systems and their impact on organizational effectiveness is reflected in many other scientific studies [8, 9, 10, 11, 12].

The object of innovative personnel management is presented by human resources of the organization, and its subject consists in developing innovative personnel technologies for proper HR-management management. Traditional personnel technologies will be replaced by new techniques based on comparatively new innovative principles (table 3).

**Table 3. Characteristics of main types of personnel technologies.**

| Elements of personnel technologies | Types of personnel technologies | Traditional | Innovative |
|-----------------------------------|---------------------------------|-------------|------------|
| Control object                    | Professional development in a planned order with orientation to preparing highly specialized experts | Programs of continuous training of personnel with orientation to requirements of professional standards and broader preparation |
| Career planning                   | The minimum functions, movement on hierarchy levels | Planning of career is based on competence-based approach taking into account a work position in innovations. Networking with educational institutions and the certified centers |
| Motivation                        | Appraisal and awarding on the basis of the standardized work indicators | Individual approach taking into account needs of the individual and encouragement of innovative enterprise approach: creative ideas, large-scale projects, possibilities of professional development, creative and career development |
| Selection                          | Standard techniques of assessment of professional characteristics. Screening and recruiting. | Process approach to assessment of candidates, abilities of the applicant, including innovative potential and leadership skills. Headhunting. Competence-based model of assessment. |
| Assessment                         | Compliance of the carried-out duties of duty regulations and to professional standards | Assessment of potential opportunities and creative initiatives |
| Training                          | Ensuring compliance of knowledge, skills of workers to requirements of professional standards | Advancing development of personnel |

Unconditional is the fact that in dynamically changing economic conditions one of the most important conditions of growth of competitiveness of enterprises and industries is increase in potential of human resources. For its achievement the system of national qualifications providing elimination of a set of the problems existing in this system can be used rather successfully. In addition, employers are to have a clear idea of the need for adaptation of the used personnel technologies.

The professional standard will become "working" for improving competitiveness of the industrial enterprise only taking into account its organizational and production specifics.
From the point of view of the state, it is optimal to use the instrument of compensation of a part of costs for developing competences of employees at industrial enterprises by involvement of experts, development of personnel, including training, teaching technical personnel and managers. Compensation of costs for the improvement of technological processes provides payment of the expenses that appear in the process of performing a technological audit, an energy audit, consultations in the field of information technologies, preparation of engineering decisions, development of industrial design. Along with it is offered to turn on the instrument of support of development of highly professional employees in the program.

Search of new innovative personnel technologies at industrial enterprises is a necessary condition for successful functioning of the created system of professional standards today. Innovative personnel technologies in human resource management at industrial enterprises represent instruments of more effective management of personnel on the basis of competence-based approach. Introducing professional standards into practical activity of industrial enterprises is impossible without the solution of this task.

4. Conclusions
The results of the conducted research allowed us to come to the following conclusions.

The level of introducing professional standards into practical activity of industrial enterprises in Russia is rather low. Personnel technologies are not adapted to the introduced system.

By far, the development of the system of professional standards is at the first stage of development. Stage similar to a phase of origin of an innovative product. At this stage there is a mass search and selection of innovative personnel technologies for ensuring effective functioning of the created system.

Potential of development of the system of national qualifications is rather high, but at this stage it does not allow us to achieve the main strategic objective, that is coordination of interests of professional education market and labor market.

There are possibilities of further increase and development of the staff. Effective formation and development of the system of professional standards is impossible without development of personnel technologies at industrial enterprises in the innovative way on the basis of competence-based approach.

Increase in efficiency of implementation of personnel technologies will allow to create prerequisites for fuller realization of the revealed intra production reserves of increase in efficiency of functioning of each division and the company in general.

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