

GCPMED 2020
**Global Challenges and Prospects of the Modern Economic
Development**

**IMPROVEMENT OF THE PERSONNEL CERTIFICATION
SYSTEM ON THE EXAMPLE OF INDUSTRIAL ENTERPRISE**

A. B. Shtrikov (a)*, D. B. Shtrikova (b)

*Corresponding author

(a) Samara State University of Economics, Soviet Army Str., 141, Samara, Russia, ashtrikov@yandex.ru

(b) Samara State Technical University, Molodogvardeyskaya Str., 244, Samara, Russia, shtrikovadb@yandex.ru

Abstract

The article is devoted to the consideration of such an issue of personnel management as personnel certification. In the context of the need for continuous education and updating of knowledge, the development of professionalism and advanced training, there is a need for a personnel certification procedure as an assessment method that makes it possible to assess the level of professional development and the suitability of an employee to the position held. The aim of the study is to improve the personnel certification procedure. In the process of work, the methods of drawing up a roadmap for the project, the method of drawing up estimates of personnel costs, and the method of evaluating the effectiveness of investments were used. The work considered the procedure for preparing managers and specialists for certification. The main problems of the personnel certification system at modern enterprises are revealed. As an example, the work assessed the current personnel certification system at ROSSKAT JSC, indicated its advantages and disadvantages. A new certification system was proposed based on the development of competency models and the compilation of questionnaires, road maps of these activities were developed and the economic efficiency of the proposals was assessed. A model of competencies for the position of head of the quality management department has been developed, with the identification of groups of competencies and levels of their manifestation.

2357-1330 © 2021 Published by European Publisher.

Keywords: Certification, efficiency, improvement of the procedure, personnel, questionnaire



1. Introduction

In the context of the need for continuing education and updating knowledge, developing professionalism and improving qualifications, there is a need for constant assessment of the company's personnel. In these conditions, the procedure for attestation of personnel becomes relevant as an assessment method that allows you to assess the level of professional development and the employee's compliance with the position. Improving the personnel certification procedure is necessary in order to create an certification system that meets the requirements of modern business and professional standards and allows for a high-quality assessment of personnel in order to achieve the set goals and objectives of the company. Personnel attestation is a systematic formalized process of assessing the suitability of an employee for the position held, designed to provide the company with qualified personnel. During the work on the article, the literature on personnel certification was analyzed.

The leading approach to solving this problem of building a conceptual model for training personnel for servicing small businesses in the emerging digital economy has become a modeling method that allows us to consider this problem as a purposeful and organized process of forming professional competencies, initiative and entrepreneurship, soft skills. The conceptual model of training personnel for small businesses in the service sector, developed by the authors in the digital economy, includes such components as: purpose, principles, methods, means, content, certification and assessment (Rudenko et al., 2018).

Since attestation of employees allows employees to receive feedback, assess their work, motivate colleagues to work effectively; identify the potential of employees, substantiate decisions on personnel rotation, evaluate the effectiveness of employee training, determine the areas of work for the development and development of personnel; to form a personnel reserve for promotion to higher positions. Certification of employees at an enterprise in the aviation industry is necessary to assess the qualitative composition of the organization's personnel, identify the load on each member of the team, identify problems and areas for improving the style and methods of managing the workforce. To achieve this goal, the following tasks were solved: the goals of certification of employees at the enterprise of the aviation industry were studied; shows the criteria for personnel certification, methods and stages of its implementation; analyzed the effectiveness of certification and rationalization of workplaces of the aviation industry; considered the main mistakes of management in the certification of personnel at the enterprise (Prosvirina, 2020).

Bernsen et al. (2020) presented the analysis of labor supply and readiness in the Maine forest industry. To assess potential gaps in skills and work culture, a survey was conducted among forest students and employers in the forest industry. Skills were assessed in three areas: interpersonal skills, knowledge and technical skills. The gap analysis focused on the difference between the stated importance of skills for employers and the current level of knowledge of the workforce in three areas. Employers have identified change work, employee motivation, contracting, problem solving, and financial analysis as basic educational needs. In addition, we assess students' willingness to embrace the culture of forestry. No significant evidence of a mismatch between the work culture of current students and their potential future employers have been found. We recommend filling gaps in regulations, certification standards, or expanding journals through workshops or on-the-job training, allowing areas such as customer relationship, marketing, or problem solving to stand out in the Curriculum.

Kutsan et al. (2020) describe the characteristics of the basic academic system for shaping personal operations in the service sector in the energy sector, taking into account the latest personnel search and skills. Initial use and distribution beneficiaries are considered to provide opportunities and training in personal operations using simulated models of power system practices in virtual centers. As a result, the study permits support the academic framework, structure and functions of a virtual research and training center for training personnel in the energy sector of Ukraine, including knowledge assessment, training and development of key personnel skills.

The article by Tynchenko et al. (2019) considers the problem of analyzing the results of certification of employees of enterprises. To solve the problem, it is proposed to use self-organizing Kohonen maps for in-depth data analysis. Also, the proposed method allows you to visualize the results of certification of company employees for its managers in order to support decision-making. As a result of experimental studies, an effective structure of the Kohonen network was revealed, which was used to solve a real problem of analysis.

Zaitseva et al. (2018) note that in the national system of professional certification that is currently being created in Russia, professional standards play an important role, both for training personnel and assessing the competencies of graduates of educational institutions, and for an independent assessment of learning outcomes. The relevance of studying the problems of personnel certification taking into account the requirements of professional standards is determined by the need to improve the regulatory framework for improving, expanding the practice of applying professional standards. As a result of the study, the authors of the article substantiated the main differences in the legal regulation of personnel certification based on the application of professional standards in the Russian Federation and formulated the tasks of personnel certification using the example of specific types of personnel certification. professional activity, identified and formulated the main problems of the application of professional standards in personnel certification. The results of this study can be useful in developing a number of measures to increase human resources both at the level of an individual company and at the regional level.

Chatterjee (2017) analyzing investment in human capital, he argues that investment in human capital is a dilemma for companies, since human resources are mobile. Based on detailed project, financial and operational human capital data from a leading multinational company in the global IT services industry, this study concludes that targeted investments to improve total human capital can help companies maintain high returns. The main findings of this study for management are that investing in human capital development through training and appraisal can improve business performance.

2. Problem Statement

Preparation for certification of managers and specialists is carried out in the following order:

1. Preparation and approval of the order on the formation of the certification commission.
2. Preparation and approval of the draft order on the approval of the schedule of certification.
3. Preparation and approval of orders for the certification of managers and specialists.
4. Familiarization of employees, subject to certification, with the calendar schedule of its conduct against signature, at least one month before its start.

5. Preparation of documents for the certification of employees subject to certification (for each employee of the structural unit): certificates, characteristics of the immediate supervisor (in free form) and copies of job descriptions with familiarization by employees subject to certification.

The main problems in sulfur certification of industrial personnel are the following:

6. Poor awareness of the certified employees about the date, procedure, and certification rules, which reduces the degree of the employee's professional and psychological readiness for certification and distorts the assessment result.

7. Certification is carried out exclusively for the dismissal of employees;

8. The results of certification are not applied in further work with employees. This problem can also occur in firms in which personnel certification is mandatory, but it is carried out formally, to unsubscribe to higher management, and its results are not applied in the company's current activities in any way. Although personnel certification should identify problems in the work of employees of the enterprise, and if the results of personnel certification do not affect the work of employees in any way, the problems of the enterprise will increase.

9. Violation of the objectivity of personnel assessment due to the fact that certification is carried out by employees of the company, which has a direct impact on the results of certification and the recommendations of the certification commission. Members of the commission can be friends or relatives of a negligent employee and drag him to high positions, although the level of his training and personal qualities do not allow him to take this position, or, on the contrary, dismiss an unwanted employee without reason, which leads to adverse consequences for the company.

10. Violation of the certification procedure.

11. Using the wrong methods of personnel assessment.

12. Incompetence of the members of the attestation commission.

13. Lack of key performance indicators for specific positions.

14. Lack of tools for personnel assessment and failure to use modern methods of personnel assessment.

15. Lack of relevant documents regulating the certification process.

16. Lack of relationship between the processes of certification and training, as well as certification and development of personnel.

17. Excessive expenses for personnel certification.

Solving these problems requires improving the regulatory and methodological framework governing the personnel certification process.

Projects to improve the personnel certification procedure allow:

- reduce the time spent on organizing the personnel certification procedure;

- to increase the objectivity of the assessment during certification by introducing competency models for key management positions and resulting indicators for specialists, as well as by developing questionnaires with specific questions for employees of each service of the enterprise with division of positions;

- to increase satisfaction with the procedure and the results of certification of both executing specialists and its consumers: certified employees and senior management, thereby reducing staff turnover and saving training costs.

In general, the certification procedure is important for both the employer and the employee. For an employee, certification is an opportunity to improve skills and move up. An employer needs certification to get rid of ineffective employees and promote effective ones. Appraisal helps to improve the work of personnel and increase the efficiency of their use.

3. Research Questions

The research questions for this paper were: How is the personnel appraisal process assessed in the available scientific literature? What are the main problems of personnel certification at enterprises? What are the ways to solve these problems? What is the regulatory and methodological framework for certification of personnel at the enterprise? How is the actual certification procedure organized? What are the indicators of the volume and effectiveness of the certification procedure for managers and specialists? What are the main advantages and disadvantages of the current personnel appraisal system at ROSSKAT JSC?

4. Purpose of the Study

The article is devoted to the consideration of such an issue of personnel management as personnel certification. The purpose of this work is to identify problems associated with certification of personnel at industrial enterprises. To achieve this goal, it is necessary to solve the following tasks:

- to analyze the current research on personnel certification in enterprises;
- to define methods and indicators for assessing the effectiveness of personnel certification at enterprises;
- identify the main problems in the certification system;
- to propose measures to improve the efficiency of the certification system using the example of ROSSKAT JSC and to determine their effectiveness.

5. Research Methods

In the process of work, the following methods were used: drawing up a roadmap for the project, a methodology for drawing up an estimate of personnel costs, a method for assessing the effectiveness of investments. The principles for assessing the certification results applied at ROSSKAT JSC are shown in Table 1.

Table 1. Principles for assessing the results of certification

	Compliant + inclusion in reserve	Compliant	Complies, subject to advanced training	Not compliant
Knowledge of technological processes	80 – 100%	66,7 – 80%	33,3 – 66,7%	≥33,3%
Knowledge of the fundamental points of the job description	80 – 100%	70%	50 – 70%	≥50%
Possession of theoretical knowledge	80 – 100%	70-80%	50 – 70%	≥50%
Knowledge of software	80 – 100%	60-80%	20-60%	≥20%

Source: authors.

Indicators of the analysis of the scope of certification of personnel of JSC "ROSSKAT" are presented in Table 2.

Table 2. Indicators of the scale of personnel certification in ROSSKAT JSC for the period 2014 - 2018

Index	2014	2015	2016	2017	2018
The number of managers and specialists who have passed certification during the reporting period, people	57	68	79	94	105
Share of managers and specialists who passed certification during the reporting period in the total number of managers and specialists,%	15,4	17,3	20,5	21,7	23
Number of positions of managers and specialists for whom competency models have been developed, people	0	0	0	0	0
Number of positions of managers and specialists for which key performance indicators (KPI) have been developed, people.	0	2	2	7	9
Share of managers and specialists for whom key performance indicators (KPI) have been developed,%	0	2,9	2,5	7,4	8,6
Share of managers and specialists covered in the reporting period by assessment procedures using progressive assessment methods,%	0	0	0	0	0

Source: authors.

Since 2015, the company has been developing key performance indicators. The company does not use progressive valuation methods. Thus, certification in ROSSKAT JSC is being carried out quite actively, however, there is a lack of a progressive assessment of the key personnel and the divisions serving production. Performance indicators of certification of managers and specialists of ROSSKAT JSC are presented in Table 3.

Table 3. Performance indicators of certification of managers and specialists of JSC "ROSSKAT" for the period 2014 - 2018.

Index	2014	2015	2016	2017	2018
<i>Share of managers and specialists who have confirmed their qualifications in the total number of managers and specialists who have passed certification, %</i>	96,5	97,0	98,7	100	98,1
<i>The proportion of managers and specialists who received promotion based on the results of certification, in the total number of those who passed certification, %</i>	52,6	48,5	36,7	43,6	45,7

Source: authors.

There is a tendency to an increase in the proportion of managers and specialists who have confirmed their qualifications based on the results of certification, which is due to an increase in the efficiency of training certified workers. However, the share of managers and specialists who received promotion during the reporting period is decreasing compared to 2014 (a decrease of 6.9% over 5 years). Consequently, an increasing number of certified managers and specialists are not ready to occupy higher positions. The number of employees for whom individual development plans have been developed is decreasing. These workers included employees who were recognized as inappropriate for their positions according to the results of certification, aimed at training based on the results of certification and included in the personnel reserve.

6. Findings

In general, the advantages of the current personnel certification system are:

1. Increase in the number of managers and specialists who confirmed their qualifications based on the results of certification.
2. Development of individual development plans for employees.
3. An annual increase in the scale of certification, which gives the manager a more complete picture of the staff.
4. Development of key performance indicators.
5. Replenishment of the personnel reserve according to the results of certification.
6. Close relationship and interdependence of the certification and training processes.

The following problems were identified in the field of personnel certification:

1. Lack of tools for personnel assessment.
2. Decrease in the proportion of employees who received promotion based on the results of certification.
3. Lack of modern methods of personnel assessment, which leads to a decrease in its quality and objectivity.
4. Low number of positions for which KPIs are developed.
5. Lack of relevant documents regulating the certification process, which leads to a decrease in the relevance of knowledge among employees and a decrease in the number of effective managers among managers;

6. Excessive expenditures on personnel certification: the average cost of the personnel certification procedure for 2018, taking into account external and internal training based on the certification results, is 2,297,400 rubles.

To solve these problems, measures were developed to normalize the process of attestation of managers and specialists, namely:

1. Development of a competency model for the positions of managers and specialists of ROSSKAT JSC.

2. Development of questionnaires for the certification of each service in accordance with the template of the current assessment system.

3. Implementation of an improved certification procedure for managers and specialists of ROSSKAT JSC.

In order to calculate the planned costs for the development of this project, take into account that:

- the salary of the head of the personnel department is 73,700 rubles;
- the salary of a HR specialist is 29,500 rubles;
- the salary of a specialist in production departments is 37,200 rubles.

The projected costs will be calculated as the daily wage times the number of days worked for each employee. The low level of use of progressive methods of personnel assessment leads to a decrease in the objectivity of certification of employees. In this regard, there is a need to introduce additional procedures and grounds for assessing the managers and specialists of the company, namely:

6.1. Development of competency models for key management positions

As part of this area, competency models are being developed for key management positions based on the existing job description, which, in turn, will introduce elements of a progressive assessment into the current certification procedure. The roadmap will help determine how much time and money will be required to develop a competency model for managers and specialists of ROSSKAT JSC. In addition, the sequence of operations and the responsible persons have been identified. According to the roadmap, it takes 38 days and RUB 72,138.9 to complete this stage of the project, including:

1. Analysis of job descriptions of managers and specialists of ROSSKAT JSC (Head of the Organizational Development Department) - 3 days.

2. Analysis of the key strategic objectives of the position (HR Specialist) - 3 days.

3. Defining the functions of the position (HR Specialist) - 1 day.

4. Description of the ideal behavior model of the manager / specialist holding this position (Head of HR, HR specialist) - 3 days.

5. Determination of the structure of the competency model (Head of the organizational development department) - 3 days.

6. Identification of the key competencies of the manager / specialist holding the given position (Head of the personnel service) - 2 days.

7. Development of a scale for assessing competencies (Head of the organizational development department) - 5 days.

8. Approval of the competency model with stakeholders (HR Specialist) - 5 days.

9. Approval of the competency model (Head of HR) - 2 days.

10. Familiarization of the head / specialist in the position with the competency model (HR specialist) - 1 day.

11. Implementation of competency models in the work of the company (HR specialist) - 10 days.

As an example, we will give the developed model of competencies for the position "Head of the Quality and Certification Department" contains two tables: one table serves as an auxiliary one for assessing the level of competence manifestation, the second must be filled in during the employee assessment process. The projected competency model for the studied position is presented in Tables 4 and 5. Competence model for the position "Head of the Quality and Certification Department".

Table 4. Levels of assessment of the employee's competence display

Assessment level	Brief description of the assessment level
1 - initial level	Insufficient knowledge of this competence; Behavior is inconsistent with this competency.
2 - level of development	Significant lack of knowledge, skills and abilities; Good learning ability and assimilation of other people's experience.
3 - experience level	Possesses a sufficient level of knowledge in this competence; Confident has this competence based on his experience; In his activities, he mainly relies only on his own experience.
4 - skill level	Shows a high level of professional knowledge, abilities and skills in a specific competence; Transfer knowledge and experience to colleagues at work.
5 - expert level	Shows the expert level of knowledge, skills and abilities for a specific competence; Is an example of mastering this competence at a professional level; He actively shares knowledge and experience with colleagues.

Source: authors.

Table 5. Groups of competencies and levels of their manifestation

Competency groups	Competence levels
<i>Corporate competencies</i>	
Leadership	5
Skill to work in team	5
Loyalty	5
Result orientation	5
Self-development orientation	4
Innovative ability	4
Initiative	4
High level of communication skills	5
Compliance with Business Ethics	5
<i>Management competencies</i>	
Strategic vision	5
Team building and management	5

Employee development	5
Planning and control	5
Delegation of authority	5
Prompt management decision making	5
Analytical thinking	5
Personnel motivation management	5
Ability to negotiate	5
<i>Professional competence</i>	
Independent development of quality standards for the enterprise	5
Control of compliance with legislation in the field of incoming inspection of materials	5
Control and implementation of quality measures	5
Management of preparation for certification and attestation	5
Management and implementation of a quality management system	5
Audit of activities carried out within the department	4
Organization of work to improve the quality of goods (works or services)	5
Ensuring operational control at all stages of production development	5
Managing the analysis of complaints, identifying the reasons for the release of defects, reducing the quality of products, deteriorating the quality of work and violations of production technology, developing measures to eliminate these reasons	5
Verification of incoming material stocks for compliance with their quality requirements of standards and specifications	5

Source: authors.

The attestation commission will assess the official level of manifestation of the competencies specified in the model and on the basis of this assessment a decision will be made on the employee's suitability for the position according to the developed questionnaire based on the instructions for this position.

6.2. Regulation of the certification procedure based on the process approach

The costs of developing a questionnaire for attestation will amount to 56860.8 rubles per 18 days, based on their salaries, including:

Study of the work of the service of JSC "ROSSKAT" (responsible - specialists of the personnel service and production departments), period - 4 days.

Studying the job descriptions of the managers of ROSSKAT JSC (HR Specialist) - 3 days.

Determination of key issues falling within the competence of managers and specialists of ROSSKAT JSC (Head of Human Resources) - 3 days.

Drawing up a list of questions for attestation of managers and specialists of ROSSKAT JSC (Head of Human Resources, specialists of production departments) - 5 days.

Approval of the list of questions from the head of the HR department (Head of the HR department) - 2 days.

Transfer of a copy of the list of questions to the personnel *career development department (Specialist of the personnel career development department)* - 1 day.

With the help of the roadmap, a clear plan of action for the project and the budget of the project are determined, which greatly facilitates the work on it, allows you to make adjustments during the execution of work.

6.3. Implementation of the procedure for annual assessment of managers and specialists based on targets

To put into effect the developed directions for improving the certification procedure for managers and specialists of ROSSKAT JSC, it is necessary to carry out the following activities with a total duration of 39 days and a cost of 60439.1 rubles:

1. Justification of the need to implement an improved procedure for attestation of personnel (responsible - Head of HR), term - 2 days.

2. Submission to the career development department of a questionnaire for attestation of the personnel of the enterprise services (Responsible employees of the services, specialist of the career development and personnel promotion bureau) - 10 days.

3. Placement of questionnaires in the internal automated system of the enterprise (Specialist of the career development bureau) - 3 days.

4. Preparation of a package of documents on the entry into force of competency models for managers (Organizational Development Department) - 5 days.

5. Providing managers holding key positions in the organization, competency models for the relevant job positions and familiarizing with them under the signature (Specialists of the organizational development department) - 14 days.

6. Conducting training for key managers on the essence of competency models and the assessment process based on it (Department of organizational development together with the department of career development of personnel) - 5 days.

Thus, the total cost of implementing the developed projects in the work of the company JSC "ROSSKAT" will be 197403.9 rubles. It is necessary to constantly monitor the implementation of projects, for which it is recommended to create a working group. The development of new activities implies a reduction in training costs based on the results of certification, i.e. the number of employees who are recommended training based on the results of certification should be reduced to zero. Thus, the cost of the improved certification procedure will be: $27900 * 2 * 12 + 197403.9 = 867003.9$ rubles. The economic effect from the implementation of the project will amount to 1,430,396.1 rubles in real savings in the salary fund of specialists involved in the development of these projects.

7. Conclusion

During the work on the article, the literature on personnel certification was analyzed. The work considered the procedure for preparing managers and specialists for certification. The main problems of the personnel certification system at modern enterprises are revealed. The tasks of the projects to improve the procedure for the certification of personnel are indicated. The paper analyzes the regulatory and

methodological framework, the actual organization of the certification procedure, indicators of the volume and effectiveness of the certification procedure for managers and specialists of ROSSKAT JSC. It was found that certification in ROSSKAT JSC is being carried out quite actively, but the certification system is imperfect in terms of the volume of documentation that allows an objective assessment of the certified employee, as well as in terms of personnel assessment methods. It is necessary to more widely implement competency models and develop KPIs for more positions. To solve these problems, measures were developed to normalize the process of attestation of managers and specialists, namely:

1. Development of a competency model for the positions of managers and specialists of JSC "ROSSKAT".
2. Development of questionnaires for the certification of each service in accordance with the template of the current assessment system.
3. Implementation of an improved certification procedure for managers and specialists of ROSSKAT JSC.

The roadmap helped to determine how much time and money would be required to develop a competency model for managers and specialists of ROSSKAT JSC, the sequence of operations and responsible persons were determined. Also, as an example, a competency model was developed for the position "Head of the Quality and Certification Department".

References

- Bernsen, N., Crandall, M., & Leahy, J. (2020). An educational needs assessment of workforce supply and readiness in Maine's forest products industry. *Forest Products Journal*, 70(1), 22-27.
- Chatterjee, J. (2017). Strategy, human capital investments, business-domain capabilities, and performance: A study in the global software services industry. *Strategic Management Journal*, 38(3), 588-608.
- Kutsan, Y. G., Gureev, V. O., Iatsyshin, A. V., & Iatsyshin, A. V. (2020). Virtual research and training centre for operating and dispatching personnel in the energy sector of Ukraine. *Information Technologies and Learning Tools*, 79(5), 90-108.
- Prosvirina, N. V. (2020). Requirements of the personnel certification procedure in the aviation industry company. *Amazonia Investiga*, 9(27), 244-251.
- Rudenko, L. G., Larionova, A. A., Zaitseva, N. A., Kostryukova, O. N., Bykasova, E. V., Garifullina, R. Z., & Safin, M. V. (2018). Conceptual model of training personnel for small business services in the digital economy. *Modern Journal of Language Teaching Methods*, 8(5), 283-296.
- Tynchenko, V. S., Tynchenko, V. V., Bukhtoyarov, V. V., Kukartsev, V. V., Kukartsev, V. A., & Ereemeev, D. V. (2019). Application of Kohonen self-organizing maps to the analysis of enterprises' employees certification results. *IOP Conference Series: Materials Science and Engineering*, 537(4), 042010.
- Zaitseva, N. A., Larionova, A. A., Shapovalov, N. I., Povorina, E. V., Takhumova, O. V., Zhukova, M. A., & Dvornikova, T. A. (2018). National qualifications frameworks: Conceptual and methodological principles in the context of unresolved issues. *Obrazovanie i Nauka*, 20(6), 70-89.