

Digital Transformation of HR Management System

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Abstract—The most important task of the modern Russian Federation is the innovative development of the Russian economy as the basis of a new economic paradigm based on modern digital technologies. This article examines the transformation of HR processes in the context of the development of the digital economy in the Russian Federation. The questions of the use of modern digital technologies in personnel management are raised, which make it possible to more effectively manage the processes of labor productivity and human potential of the organization, as well as create a digital environment for personnel communication. The introduction of digital technologies in the field of human resource management will significantly change the approaches to personnel management standards. Organizations today must make decisions on the adequate equipping of departments and divisions with modern equipment and programs that allow them to quickly respond to changes in the external environment and advanced technologies. Digital resources allow organizing an effective personnel management process to automate and improve routine mechanisms, as well as reduce the load and funding of important tasks of the organization.

Keywords—digital HRM, HR, HR transformation, remote management

I. INTRODUCTION

Modern information systems make it possible to solve management problems of almost any complexity, including HR management. The digital transformation of the personnel management system contributes to the development and application of modern digital technologies that make it possible to manage employees efficiently. Digital transformation of HR management contributes to the dynamic development and implementation of remote HR management

Digital technologies are used to improve efficiency in human resource management and reduce the labor intensity of HR functions; accelerate the adoption of managerial and personnel decisions; improve the quality of analytical data; allow forecasting for the current and strategic periods; carry out personnel management remotely; get access to modern technological solutions and the possibility of planning

personal development for the head and employees of the enterprise.

The introduction of modern Digital-technologies in the HR sphere will allow to manage the processes of labor productivity and human potential of the organization more effectively, as well as create a digital environment for personnel communication.

II. RESULTS

During the study, it was revealed that there are the following digital technologies for HR management.

For example, useful services might be:

- “Experium” recruitment automation system;
- intelligent full cycle recruiting system “Skillaz”;
- KPI-Management and KPI-Motivation system “KPI-Drive”;
- modular platform for personnel management “HRmaps”.

To implement personnel management remotely, the following features must be considered:

- presence in the structure of the organization of highly qualified specialists who can not only support the operation of the systems, but also work directly in them;
- additional costs for the implementation of digital technologies in the organization management process;
- optimization of the number of personnel depending on the automation of work processes.

Digital transformation of HRM process makes it possible to increase the efficiency of personnel management, and also allows you to organize the personnel management process remotely, however, the resistance of employees, in particular, representatives of the older generation, can also affect the efficiency of using digital technologies and the development of digitalization in the organization.

III. DISCUSSION

The digital transformation of the economy undoubtedly requires a revision of the rules of doing business, new management models are emerging that ensure efficiency, innovation, flexibility, and adaptability. And the basis for this transition is the transformation of human resources.

The transition to digitalization is considered a new stage in the formation of new approaches to personnel management and brings HR work to a new level of management, where the use of modern tools becomes necessary.

Currently, the following trends in the field of personnel management are distinguished in the Russian Federation [1]:

- HR automation;
- HR analytics;
- HR marketing;
- smart recruiting;
- e-learning.

1. HR automation implementation.

The use of services and applications for automation by HR specialists is gaining momentum:

- internal document flow;
- recruiting: search and selection of candidates for vacancies;
- assessment and certification of personnel;
- personnel training;
- assessing staff loyalty and involvement;
- monitoring the HR brand of the company;
- HR analysts.

Consider as an example the automation of recruitment processes Experium program, which is an automated labor enterprise resource management system.

HR processes are represented in the system by modules:

- “Recruitment”;
- “Education and development”;
- “Online testing”;
- “Personnel reserve”;
- “Work with alumni”;
- “Individual development plans”;
- “Assessment”;
- “Adaptation”;
- “Preparation of the workplace”.

Each of the modules is implemented as an automated subsystem that provides a full cycle of work in one of the areas of work in the field of human resources management.

Experium modules are ready for use, both in standalone

mode and in integration with other automated systems that provide an accounting and settlement circuit for working with company personnel.

Another example of the automation of HR-processes can be the KPI-Drive service, with the help of which the manager can control the efficiency of the personnel, reward employees and pay for their work according to the real result.

The KPI-Drive provides for “Indicators” (key performance indicators), “Tasks” (assignments), “Grades” (assessment of performance standards) and “Payment” (calculation of bonuses or salaries).

2. HR analytics.

HR analytics is becoming a standard tool for most HR managers. Recently, HR experts and business leaders have shown more and more interest in collecting and analyzing information about their own employees. The use of Big Data and Data mining in the field of personnel management and the transformation of HR information into effective business solutions make it possible to work with factual data, predictive analytics and increasing HR ROI.

Despite the high interest in this area, only 7% of Russian enterprises have the position of HR analyst.

3. HR marketing: an attractive employer brand.

HR Marketing Trends:

- creation and support of external and internal communications (media, blogs, events, etc.);
- work with staff loyalty and involvement;
- creation of brand ambassadors. Employee blogs;
- creating an authentic company and corporate culture in which one wants to work;
- non-standard creativity in HR-brand promotion. Corporate content you want to share.

HR-brand is not only external promotion and positioning of the company in the labor market. The internal atmosphere in the team, corporate style and culture - all this is manifested in one way or another in the network and affects the reputation and image of the company not only among potential applicants, but also among partners and clients [2].

Therefore, it is logical that not only the personnel, but also the marketing department is usually engaged in general promotion in social networks. For example, in the communities of an organization, it is not only advertise open vacancies, but talk about employees, specialized conferences and forums, about certification and professional training from partners - on the one hand, this serves as an additional confirmation of the qualifications of our specialists in the eyes of clients, and on the other hand, it shows potential candidates that the company is really interested in the growth of its employees [2].

4. Smart recruiting. New tools.

Finding new tools for recruiting talented employees, as well as attracting talented and promising candidates is almost impossible without the use of new tools:

- robots recruiters;

- chatbots;
- new channels of attraction;
- job sales - selling job descriptions;
- targeted advertising of vacancies;
- new tools for assessing candidates.

For example, bots can develop individual plans for the training and development of each person, including the development of soft skills. For example, advise literature or courses on specific skills. Or do a quick test and advise resources based on the test results. The chatbot helps the employee to study wherever it is convenient for him. And all useful materials will be stored in his smartphone [3].

The chatbot can be equipped with the following main functions:

- employee greeting;
- the necessary information about the company (mission, goals, history, structure, how to arrange sick leave, vacation, etc.);
- obtaining the necessary contact and descriptive information about the company's employees;
- the ability to ask questions of interest and immediately get answers to them (all questions and answers are entered into the chat bot in advance);
- schedule of minibuses, information about where the dining room is, rules for using the meeting room and much more.

The use of bots is relevant both for the adaptation of new employees of the enterprise and for helping all employees of the enterprise. Automation of HR processes not only helps to increase the speed of work with personnel, but also for many employees will facilitate professional activities from a psychological point of view [3].

First, there is the human factor, which means that even the most experienced mentor can overlook some details. This mainly concerns documents, regulations, laws, etc.

Second, do not underestimate the level of competition among workers. Every person is afraid of losing his job, and if the mentor is "perfect", then his ward will soon be able to become a contender for his place.

Third, people are often "squeezed", especially if they recently got a job. It is often easier to check something with a chatbot or in an application than bothering your colleagues for fear of appearing to be incompetent.

The main advantages of chat bots include [3]:

- do an excellent job with computing operations and analyze databases in seconds, giving the optimal solution;
- automates routine activities, allowing you to save on personnel;
- as an assistant, a bot is not much different from a person, while it works many times faster;

- the chat bot searches quickly, which is especially important when working with large amounts of data;
- chat bots are improving rapidly;
- information is constantly updated, not static.

The other example would be the Skillaz software product, which is great for selecting, evaluating, and testing candidates when recruiting for mass and spot jobs.

The Skillaz software product is a full cycle recruiting automation system designed to support recruiting tasks from creating recruiting plans to hiring new employees. Skillaz software allows you to expand the selection funnel, improve the quality of candidates, reduce the time and cost of filling vacancies, and reduce employee turnover.

Key features of the Skillaz system:

- maintaining a common database of candidates with the ability to filter by various parameters and view all information;
- support of procedures for searching and attracting candidates;
- robotic assessment of personnel, which removes the task of routine processing of thousands of resumes from recruiters;
- collecting statistics with a chronological funnel and providing analytical reporting on the selection process.

5. E-learning.

The development of the potential of workers is inextricably linked with training. The emergence of new training programs within companies confirms this trend: companies invent their own methods, form convenient systems within or catalyze market solutions [4].

Trends in e-learning staff:

- mobile learning;
- adaptive training using IT. Personalized Learning - applying an individual learning path. Implementation of individual employee development plans;
- electronic mentors;
- gamification;
- assessment of training effectiveness: measuring ROI of training.

There are platforms that include different HR areas. For example, HRmaps is a modular platform for solving HR problems: recruiting, adapting, evaluating, training and developing talent.

HRmaps allows you to manage all HR processes in a single window, generate reports and conduct analytics, so important for decision making.

In HRmaps, an employee's personal account has a friendly interface, where everyone can customize the visibility of the desktop for themselves, as well as a convenient back office for administering and setting up all processes, which does not require any special IT knowledge from an hr-specialist.

The HRmaps platform was created to speed up team interaction, get rid of routine, and give more opportunities to employees for career growth.

Gamification can be used in different areas of HR, but there are also many successful examples of the use of gamification in employee training.

McDonalds in the UK trained employees in a game of timed challenges, scores, and feedback. Employees could make mistakes and learn from them. The success of the game saw a profit growth of £ 23 million.

WalMart has developed a game to educate employees about safety and company procedures. The employees themselves chose the level of difficulty and each studied at their own pace. Six months later, the company reported that the amount of wasted time was reduced by 50% on average across the industry. Modern technologies significantly reduce labor intensity, stimulate the recruitment process, create conditions for optimizing management processes in the field of personnel management and the activities of employees at the enterprise.

However, despite all the positive aspects that are noticeable in the application of gamification in personnel management, the implementation of this tool is proceeding rather slowly both in the West and in Russia. According to statistics, about 30% of personnel management specialists in Russian enterprises have never heard of such a phenomenon as gamification at all. It turns out that this powerful tool remains completely underused and underestimated in the world [4]. Where this tool is nevertheless used, it is often used in its raw form, projects for the implementation of this element are not fully developed and the potential is not fully revealed. There are also critics who associate the term gamification with playing and further with the loss of productivity, since in the human mental sphere, play and work are opposite concepts. Thus, it is necessary to raise the level of education of enterprise managers, as well as specialists in the field of personnel management in terms of the fact that gamification is a powerful tool for business development, which, if used wisely, helps to increase staff loyalty and motivation [5].

When organizing a remote process of personnel management, managers need to delegate authority, and for this it is important to correctly identify an employee who would be able to fully control activities at his site in the absence of a manager. Due to the fact that employees work worse when there is no immediate supervisor nearby, it is necessary to maintain constant contact with their deputy, as well as with their employees, receiving and providing complete information regarding the work performed.

Remote personnel management, as a rule, implies an increase in the number of communication channels. For example, if the management process takes place remotely, then the employees can be informed of the personal mobile phone number and Skype, chat, forum, personal email address of the manager, etc. That is, the range of possible communication channels expands. Thus, being absent from the workplace, the manager becomes, in a sense, even more "available" for his employees. It is important to define the rules for contacting the supervisor of subordinates, namely, to outline the range of issues on which they can write and call. The rest of the daily report and the setting of tasks is taken

over by the deputy, with whom it is also necessary to correctly build relationships, having determined what goals he faces, in what form and how often he receives new tasks and reports to the manager, what issues he can solve independently, and the solution which it is extremely important to agree with the management [5].

The next important point is to develop specific, measurable, realistic goals for each employee. When developing and setting goals, you can use the concept of MBO (Management by Objectives) - management by goals, founded by Peter Drucker. The peculiarity of the MBO concept is that the goals are not just "descending from top to bottom" - they are developed jointly by the boss and the subordinate [6]. During the discussions, personal goals are developed for each employee. And then the way is determined by which the leader will control the achievement of a particular goal and set the next one.

A successful practice of remote control is the setting of daily tasks, when the manager at the same time sends a letter with specific tasks for the day, and the employee sends a response before leaving work, indicating the completed tasks or stages of their completion.

Each manager in cases of using remote control must master the technique of videoconferencing simultaneously with several employees. Meetings that a leader is used to holding in the workplace can be carried out remotely.

To implement remote management of employees, the manager needs to know the features of the written method of communication, which requires a specific expression of thought, clarification of wording, a logical statement. It is useful to summarize all the above in a short form at the end of the letter. The manager must be able to correctly conduct business correspondence in electronic form, clearly and clearly set tasks and receive answers to them.

In the process of remote control, deformalization of communication often becomes effective. The style of online business communication tends to change from more formal to less formal, which leads to a reduction in psychological distance. And in the case of a remote form of control, the psychological distance is maximum [6]. To deformalize communication, one should partially add personal correspondence.

To assess the effectiveness of the manager, a performance appraisal can be used - an assessment that allows you to compare costs and the result. Performance management is a personnel management system based on assessing the achievement of goals and assessing the level of development of competencies. In the classical version, this system includes: an assessment of the achievement of results (employee performance); assessment of the level of development of competencies (in relation to the existing model of competencies at the enterprise); appraisal interview (developing conversation with an employee). Evaluation of the achievement of results (employee performance) includes the correlation of planned results with those achieved. Each task should be assessed against predetermined criteria (performance requirements) [7].

If the company has implemented key performance indicators (KPI), the process of preparing for the assessment will be simple and structured. It is necessary to study the

statistics on the performance of employees and, based on these actual indicators, derive the average score for each indicator for the period. It is important to pay attention to indicators that “sink” and indicators that “go off scale”. This is necessary to analyze how and by what means the result is achieved, or to clarify the reasons for the lack of a result.

If there is no KPI, you can use the universal standards method. Universal performance standards are developed based on three key parameters of any activity: the volume of tasks performed according to job responsibilities; deadline for completing tasks; quality of tasks. In the absence of strict accountability, it will take a little longer to arrive at an average performance across these three indicators [8].

Next, we assess the level of competence development. If the company has an accepted and working model of competencies with a description of manifestations in behavior, the manager needs to “correlate” the employee's behavior in working situations with a rating scale and give him marks for all the required competencies. Then the employee should do the same, while he should not know what grades were given to him. If there is no working competency model, established work standards can be used [9]. This is applicable to the customer service industry. If there is nothing, then it is too early to use the performance appraisal. It is impossible to objectively assess the effective or ineffective behavior of an employee if there is no established and valid standard against which this behavior can be compared. At this stage, the manager, and the employee independently and independently of each other determine the estimates.

It makes no sense to conduct a performance appraisal in the following cases: if the company does not have a competency model with a description of indicators of effective and ineffective behavior; if it is not planned to hold this event on an ongoing basis; if the individual performance of employees is not monitored for specific indicators.

This type of assessment is most effective in enterprises with a well-developed corporate culture, where there is transparency and career planning. The essence of the method is the cooperation between the manager and his subordinate. Feedback from supervisor and subordinate is a very important point here.

To implement personnel management remotely, the following features must be considered [10]:

- presence in the structure of the organization of highly qualified specialists who can not only support the operation of the systems, but also work directly in them;
- additional costs for the implementation of digital technologies in the organization management process;
- optimization of the number of personnel depending on the automation of work processes.

Digital transformation of HR processes makes it possible to improve the efficiency of personnel management at the enterprise and allows to competently organize a remote management process. However, it should be borne in mind that the resistance of employees to change, by representatives of the older generation, can also affect the effectiveness of

using digital technologies and the development of digitalization in the organization. Therefore, during the implementation of modern technologies, it is necessary to consider all the characteristics of the personnel.

IV. CONCLUSION

The introduction of digital technologies in the field of human resource management will significantly change the approaches to personnel management standards. Organizations today must make decisions on the adequate equipping of departments and divisions with modern equipment and programs that allow them to quickly respond to changes in the external environment and advanced technologies. Digital resources allow organizing an effective personnel management process to automate and improve routine mechanisms, as well as reduce the load and funding of important tasks of the organization.

Thus, the success of the digitalization of the Russian economy will depend not only on the development of digital technologies directly, but also on the availability of qualified specialists who, using modern technologies, could create optimal conditions for the development of effective enterprises.

References

- [1] T. T. Tomanna, D.Y. Gerbi, M.A. Hossin, and S. Zhang, “Impact of Information System on Transformation of Human Resource Performance: An Exploratory Study in Oromia Radio and Television Organization”, *Journal of Human Resource and Sustainability Studies*, 2018, vol. 06, pp. 37–52. DOI: 10.4236/jhrss.2018.61025
- [2] D. Wei, K.R. Varshney, and M. Wagman, “Optigrow: People Analytics for Job Transfers”, in *Proceedings of BigData Congress, 2015*, pp. 535-542. DOI:10.1109/BigDataCongress.2015.84
- [3] D.L. Stone, and J.H. Dulebohn, “Emerging issues in theory and research on electronic human resource management”, *Human Resource Management Review*, 2013, vol. 23(1), pp. 1-5. DOI:10.1016/j.hrmr.2012.06.001
- [4] N.V. Molotkova, M.N. Makeeva, and D.L. Khazanova, “Digitalized Personnel Management”, in *Proceedings of The European Proceedings of Social and Behavioural Sciences*, 2019, pp. 757-767. Samara: Future Academy. DOI: 10.15405/epsbs.2019.03.75
- [5] D. Sceulovs, V. Shatrevich, and E. Gaile-Sarkane, “Evaluation of E-recruitment as a Business Model through Internet of Things Approach”, *Journal of Business and Economics Review*, 2017, vol. 2(1), pp. 13-27.
- [6] A. Nankervis, J. Connell, R. Cameron, A. Montague, and V. Prikshat, (2019). ““Are We There Yet?” Australian HR Professionals and the Forth Industrial Revolution”, *Asia Pacific Journal of Human Resources*, 2019, pp. 1-17. DOI: 10.1111/1744-7941.12245
- [7] P. Rastgoo, “The Role of Human Resources Competency in Improving the Manager Performance”, *Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis*, 2016, vol. 64(1), pp. 341-350. DOI: 10.11118/actaun201664010341
- [8] J.S. Brennen, and D. Kreiss, The international encyclopedia of communication theory and philosophy, in: K.B. Jensen, and R.T. Craig (Ed.), Chapter in the book: *Digitalization*, Chichester: Wiley Blackwell, 2016.
- [9] F. Cantoni, and G. Mangia, *Human Resource Management and Digitalization*, Abingdon, New York, Torino: Routledge, 2019.
- K. Lo, K. Macky, and E. Pio, “The HR competency requirements for strategic and functional HR practitioners”, *The International Journal of Human Resource Management*, 2015, vol. 26(18), pp. 2308-2328. DOI: 10.1080/09585192.2015.1021827