

# **The Use of Digital Technology in Personnel Management (HRM)**

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**Abstract.** The purpose of the research is to develop practical guidelines for personnel management in an organization which would be instrumental in improving the efficiency of the personnel management system and conducive to the employees’ growth of labor productivity based on the use of digital technologies. Special features of the up-to-date labor market which have arisen under the influence of the economy’s digital transformation have been studied. Special features, advantages and disadvantages of transition to remote work and freelance work by employees have been analyzed. Up-to-date digital technologies which are recommended for use in order to increase the efficiency of organization management have been reviewed.

## **1. Introduction**

The Russian Federation has been active in constructing its digital economy which inevitably has an impact on the sphere of personnel management. Russia is yet to investigate in-depth the issue of digital transformation influencing the nature of work done by the organizations’ employees and, on the whole, on the system of personnel management. Analysis of Western sources confirms that “digitization permeates everything” [1]. Practice has shown that digital technologies in all the spheres of their present day applications allow an organization’s efficiency and productivity to be increased. Efficiency of personnel management can be also augmented if all the opportunities offered by digitization in Russia are studied and structured. How, under the conditions of digital economy, is one to provide an organization with high quality personnel, capable of performing the labor functions they are entrusted with and optimize the use of such personnel? Digital technologies have imparted special features absolutely to all the areas of personnel management, such as selection and recruitment of employees, adaptation, training and development, assessment, organization of work, motivation and remuneration. A number of authors write that digitization does not change only the technologies, but it also changes our communication, socialization and interaction, which implies huge changes for any personnel manager- “This not only changes how we communicate and interact as humans, but in turn also revolutionizes how organizations themselves operate, which implies big changes for any human resources manager” [2].

Digitization requires adaptation and development of new knowledge and new operating methods. “Digital technologies are designed for constantly changing method practiced by an organization of hiring, managing and supporting people” [3]. Automation of many processes, increasing the speed of operations, variety of opportunities, flexibility – all these are upsides of digitization. Its downsides consist in making more complicated the process of management, shortage of qualified employees handling personnel management, a large volume of the information accumulated and calling for processing. Besides, brand new labor relations, management methods, uninvestigated psychological peculiarities of relationship between the organization and employees have emerged. This work is devoted to developing practical guidelines relating to management of personnel in an organization which would be instrumental in improving the efficiency of the personnel management system and growth in the employees’ labor productivity based on the use of digital technologies.

## **2. Relevance**

Topicality of the research lies in the fact that growth in the organization employees’ labor productivity and, on the whole, increase in the efficiency of the personnel management system resulting from use of digital technologies will result in growing competitiveness of organizations, a more sustainable position in the market.

Let us point out that one of the key consequences stemming from emergence of new digital technologies for the labor market in Russia is availability of opportunities for remote work, the organization personnel’s remote work. The peculiarity consists in the fact that there is no territorial linkage of the employee to the location of the employer organization, there disappear various limitations (transport, shortage of personnel, communication with other employees, etc.). In the digital world, such forms of work have been gaining popularity as freelance and outsourcing. According to the World Labor Organization, the number of remote employees world-wide makes up 17%, while in Japan and the USA, it has already reached almost 40% [4]. “In North America and Western Europe today, at least 30% of companies already outsource their payroll management and the trend is growing. In Belgium outsourcing reaches 90%” [5]. The research unit of HeadHunter in the RF has polled job seekers as to their attitude to remote work. The survey has shown that among the working job seekers 31% are working remotely. Out of them 14% are freelancers and 17% are remote employees on the payroll of the companies [6]. Management of a rather considerable chunk of employees—remote personnel—is a necessity using new modern approaches and taking into consideration the special features of such work.

## **3. The purpose and objectives of the study**

The purpose of this study is to devise practical guidelines relating to personnel management in an organization which would facilitate improvement upon efficiency of personnel management and growth in employees’ labor productivity by leveraging off the use of digital technologies.

To achieve this goal, the following objectives have been set: 1) study of salient features inherent in the personnel of an organization brought about by digital economy; 2) analysis of digital technologies capabilities, which enable increase in efficiency of personnel management in an organization; 3) elaboration of the guidelines aimed at improving the efficiency of personnel management while leveraging off digital technologies.

## **4. Theoretical part**

The author has isolated the advantages of an employee freelancer compared to an employee who has a workplace at an organization. For the employer, efficiency lies in the fact that premises and office equipment costs are reduced. A flexible headcount of employees is ensured as well as a reduction in firing costs. Since the employee is not legally bound up by a labor relationship with the organization, efficiency manifests itself in reduction in the costs incurred by making social deductions from the employees’ payroll (civil and legal relation do exist rather than labor relations). Digital technologies reduce transactional costs incurred in synchronizing and coordinating actions by participants in

business processes, which occur at any distance. As a result, these advantages cause labor productivity to grow, final product cost to decrease and efficiency to rise.

Mentioned as disadvantages of the remote work can be lack of one single team who are socializing in reality (off-line) and connecting with each other, difficulties with operational control of the work process. Also, problems are possible with motivation and work quality of the freelancers. More often than not, it is representatives of young people as well as people at the age of up to 40 years old who tend to become freelancers. The term “millennial” has recently been coined. A millennial (“network” generation, the generation that were born after 1983 are typified by deep involvement in digital technologies) is an employee of the new type. Conventional methods of personnel management are often non-applicable to millennials. It has been ascertained that an employee freelancer: often resists any forms of coercion; they lack a sense of reverence and readiness to be subordinate to elders; they know their strengths and consider themselves to be unique and talented; success is not measured by wealth or status, it is measured by brilliance and variety of life; career or “prestigious job” are not of value; short horizon for planning life; the main requirement is to be happy right now rather than in some distant future; unwilling to commit their fate to the that of the employer; free working hours are welcomed.

Now let us dwell on the advantages of remote work for freelancers themselves. Firstly, freelance allows participation in several project rather than in just one, work for different organizations. As a result, it may be much more beneficial than cooperation with just one organization. Secondly, this provides relative freedom (lack of direct or rigorous control, ability to flexibly plan working time). Thirdly, a saving of time given there is no need to travel to work (and transportation costs). Fourthly, ability to network with organizations or users in other regions or countries. Fifthly, working at their customary workplace customized and tailored to their specific needs. L. Yanov [7] has listed 14 digital tools enabling productive work by a freelancer – for example, virtual planner ZenDay, working time accounting system Metric. Highrise is a CRM-service, which helps track clients and potential customers, as well as different tools for project management, accounts, etc.

Also the following digital technologies are used in personnel management: “Today, hundreds of new collaboration software providers reinvent HR processes with groundbreaking solutions. We can mention Clustree for instance, a solution integrating artificial intelligence into HR data treatment, Assess first in the predictive recruiting, Talentsoft offering a stack of talent management tools or Workday with its SaaS payroll solution” [5].

Giving consideration to the above features, freelancer’s work motivation is ineffective using the standard methods. The term “precariat” means a social class of employees with temporary or partial employment, which is of ongoing and steady nature. The following is characteristic of the precariat: unstable social position, weak social protection, lack of many social guarantees, unstable income. This term was introduced by Guy Standing [8]. The freelancers’ new work places do not correspond to the standard model of complete employment, part time working day is used more often, work is done as required. Another change in the labor market has something to do with servitization (concept in accordance with which industrial enterprises expand the spectrum of services offered by them, which, as a result, push the boundaries much farther than standard supplies of spare parts or typical after-sales service). Organizations turn from conventional producers into providers of integrated solutions capable of satisfying all the customers’ preferences. Servitization of economy has resulted in dramatic growth of the number of self-employed. In the Russian Federation, up to 25 million people, are recipients of income but, at the same time, they are not in labor relations with any employer and have not registered as private entrepreneurs.

Not all the personnel work motivation factors are equally significant and important for remote personnel and those who work at their workplaces in an enterprise. Material motivation is of importance. However, the psychological climate does not depend on the employees’ team. Career advancement for a freelancer is not unambiguous and is not always possible. Working conditions are molded by freelancers themselves and on their own. Conventional motivation systems are not effective enough for certain professions in the digital economy. We propose, for the sake of motivating

freelancers' work, that we be more active in using the following methods: 1) gamification, i.e. moving the game process from computer games to real life, including doing that during the process of work and payment for work. Gamification presupposes competition, quests, awarding points, issuing badges, prizes, placing the leaders on the board of honor; 2) getting electronic bonuses, as well as capabilities in the Internet hitherto inaccessible to the employee; 3) ability to have spare time and to plan their working schedule on their own.

Digital technologies also enable automation of many tasks in the area of personnel management, as a result of which labor productivity will be increased, costs will be cut back upon. Many companies are already using virtual recruiters for search, assessment of personnel. To automate the process of selecting personnel, the following tools are currently utilized: global network, mobile applications, cloud technologies and services, job-sites, social networks, online tools for assessment of candidates, Big Data, etc. Also to train personnel, for refresher training, digital technologies are used. These are technologies of fast learning, e-learning, gamification, based on robotization and automation of HR-processes [9].

According to the portal hh.ru, in 2018, 11% of employers in Russia, were already using artificial intelligence (AI) in their work with personnel, 49% were yet to start doing that but they were looking into it, whereas 40% of the respondents were not interested in this subject matter at all. More often than not, companies resort to systems with elements of artificial intelligence when recruiting personnel. Organizations develop their own technologies or adapt those available in the market for buddying, training, shaping. Budgeting personnel costs, analytics and many other things are the tasks dealt with using the digital technologies.

Among the advantages in use of the digital technologies, the following ones are named: relieving HR-employees of routine actions, optimizing the process of searching for candidates and automating this process, analyzing a huge amount of data for a short period of time, using other sources of data about candidates except for resume, assigning the personnel manager as HR-partner and coordinator of investors, labor productivity growth. Robots replace a human to carry out the following functions: automatic selection of resume depending on certain parameters, calling up candidates, communicating with candidates in chat, conducting a video interview.

The Boston Consulting Group refers Russia to countries of transitional period from the economy of resources to economy of knowledge, where a considerable percentage of the population has a medium level of qualifications and is engaged in cognitive routine tasks (48%). In an economy of knowledge with its highly qualified intellectual professionals capable of solving complex cognitive tasks and assuming responsibility for it, in the Russian Federation, only 17% of the workforce is utilized (for comparison, in the U.K. it is 45%) [4]. This fact goes to show that there is a problem there with a shortage of qualified human resources versed in personnel management as well as a shortage of qualified personnel possessed of required digital competences.

Digitization of personnel management functions requires a command of competences in digital economy, modern digital tools for automation of HR-processes in a company. Subject to change in this area are to be professionals and executives of all the levels: HR-Directors, HR-Consultants, HR-Business Partners, HR-Analysts, recruiters, employees specializing in corporate training, compensations and benefits, HR-branding, as well as division heads and business owners [10].

As a result of analyzing new digital capabilities, as well as based on studying typical traits of an organization's personnel in the digital epoch, we propose the following recommendations aimed at improving the efficiency of the personnel management system: 1) making an efficiency analysis of using remote employees and outsourcing in an organization; 2) formulating a business plan for transition to remote work or outsourcing; 3) training employees specializing in personnel management with a view to acquiring necessary digital competences; 4) working out new methods of organizing, controlling and motivating personnel using online tools, gamification, etc.; 5) using digital methods of selecting personnel, training, assessing and analytics; 6) implementing the digital technologies for payroll.

## 5. Results

As a result of the investigation, the following tasks have been fulfilled: 1) analysis has been made of changes and characteristics of the labor market in the Russian Federation related to construction of the digital economy. Particularly, advantages of freelance and remote work have been identified both for the organization and the employee. Changes in the behavior of personnel during the digital epoch have been analyzed; 2) new opportunities have been established in the area of personnel management as provided by the digital technologies. The main digital tools have been reviewed as used in Russia and abroad, to enhance the efficiency of an organization's performance and personnel management; 3) the guidelines have been elaborated with a view to raising the efficiency of personnel management system in an organization.

## 6. Conclusion

Digitization of the economy is one of the most important problems of our times. Digital technologies rapidly transform both the business practice and the society, and they are an integral part of the future innovative economy [11]. Digitization covers a broad spectrum of new applications of the information technologies in the business models and products which transform the economy and social interactions [12].

Transformation of the economy into digital one has resulted in change in the nature of work for a significant proportion of employees in commercial organizations. This proportion will be dramatically increasing in the future, which also attests to the topicality of this research. Digitization is capable of boosting productivity of organizations and has become one of the key avenues and paths followed by executives and governments [13]. Previous personnel management system and the conventional methods are not effective enough and require improving subject to the peculiarities of work and the mindset of remote employees and freelancers. Development trends for growth in the area of the Internet of things, analysis of the Big Data, cloud computations and creation of the artificial intelligence impact all the types of activities, specifically - technology in the sphere of human resources. Digital transformation of business is capable of ensuring that labor productivity and competitiveness of the organization grow and improve.

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