STAFF RECRUITMENT IN THE DIGITAL AGE

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Abstract. Digital technologies are changing the methods of organizing work and managing human capital, which significantly improves the company's competitive position in the market, reduces the number of expenses and directly affects the amount of profit and the number of attracted customers. The formation of intelligent and digital network systems in the future will create self-organizing and self-governing organizations in which equipment, machines, employees and products interact and collaborate directly with each other. Such an intelligent connection will make management more flexible and efficient. Of great importance in the management of human capital begins to acquire "digital thinking." Enterprises around the world invest millions of rubles a year on the selection, development, and retention of personnel, assessment, and training. But the main attention is paid to the selection of personnel, which in the digital era can be called digital recruiting. Digital recruitment is the process of leveraging digital technology to the source, attraction, assess, select and hire candidates for vacant positions. This includes leveraging job boards, career websites, mobile recruiting, online assessments, and social recruiting. According to Forbes, about 40% of companies in the US use HCM, ERP, and other recruitment management cloud solutions.

Keywords: digital technologies, human capital management, digitalization, digital recruiting, staff selection.

Introduction. A fundamental factor in the success of digitalization is the availability of competent personnel capable of developing and implementing digital technologies. Digital skills are becoming critical (Sharipova 2019). This is recognized both at the business level and at the state level. For example, in Russia, the federal project "Personnel for the Digital Economy" is currently being actively implemented, which is being implemented as part of the national program "Digital Economy of the Russian Federation" (Masyuk, Zhao and Vasyukova 2019). The implementation of the project is transforming the labor market, which means that the tools and channels for finding candidates are changing. Now the recruiting system is undergoing automation as much as possible: there is a system for tracking resumes, evaluating applications online, chatbots for an initial interview, evaluating candidates through video interviews and more, and almost all digital products have mobile applications.

For many years, enterprises have increased their efficiency by hiring workers whose knowledge and experience have copied the most successful employees. Now the analytical capabilities of HR software give a clearer picture of the hidden potential

of candidates, the systems help to find people with the required qualifications, assess their personality and development potential within the company, reveal the talents of current employees, etc. (Nonka, Borisova 2019). Top 20 software for recruitment is shown in table 1 (Recruitment Software 2018).

For companies that have thousands or even tens of thousands of employees, staffing is always an urgent problem (Applicant Tracking System 2020). 2017 was a breakthrough in this direction, thanks to the attraction of machine learning technologies, both in the field of recruitment and in the organization of its work. In recent years, software using artificial intelligence has become a key tool for the search and pre-selection of candidates (Lebedeva, Lazutina and Tsar'kov 2018). According to a Jobvite study, 43% of recruiters consider the contribution of artificial intelligence to their daily work to be significant. A recent Global Recruiting survey found that a US recruiter on average processes applications from 91 candidates daily. At the same time, the quantity/quality indicators of candidates remain stable over the past decade. But the involvement of machine learning technologies in the hiring process allowed for the first time in a long time to seriously improve the labor costs for attracting one new employee.

Table 1: TOP-20 software for staff recruitment

#	Name of HR Soft	#	Name of HR Soft
1	ZipRecruiter	11	Workday Human Capital
2	BambooHR	12	iCIMS Recruit
3	ApplicantStack	13	Lever
4	Breezy HR	14	ApplicantPro
5	Built for Teams	15	Bullhorn
6	JobDiva	16	Betterteam
7	Vincere	17	CEIPAL TalentHire
8	Zoho Recruit	18	Ultipro
9	LinkedIn	19	WebHR
10	Greenhouse	20	JazzHR

Intelligent automation can improve the efficiency of recruiters by taking on the functions of the pre-selection of candidates through a total database scan and selection of the necessary profiles according to specified criteria. Employment managers were able to pay less attention to working with the primary funnel, and more to optimize conversion rates and reduce hiring time (Kuznetsova 2019). The use of artificial intelligence is also positively evaluated by candidates. With large volumes of recruiting, candidates previously received a minimum of time for an interview, since managers were constantly in a time pressure state. The massive use of chatbots for initial contact allows you to make the interview more detailed and informative. Applicants can ask questions to the robot, and he will give them detailed answers, tell more about the tasks, position and rules of the company, career prospects and corporate culture of the company.

As Alexa, Siri, and Google Home, Chatbot's recruiting system uses artificial intelligence to understand questions and answer correctly. Companies can set up

their chatbots to respond to emails or conduct conversations through instant messengers. At the same time, chatbots themselves analyze the answers of candidates, put up an assessment of their literacy, language proficiency, level of competencies and work experience, then to enter data into a common table for a comparative analysis of the candidate's potential.

According to a recent Allegis poll, most candidates are positive about talking with the bot in the early stages of the application process. 66% of the candidates noted that they had prepared in advance for the interview with the chatbot, although most still prefer to work with a human recruiter (Matveeva and Zolotaryuk 2018).

Method and Methodology. The main digital recruiting method is the recruitment funnel, which came to HR from sales. This is an analytics tool that reflects the results of each stage of recruiting in quantitative terms. The model has stood the test of time but is still gradually becoming obsolete.

To begin with, we note that there is no single method for constructing a staffing funnel. The number and composition of stages depending on the industry of the company and the nature of the vacancy: for example, some employers separately pass the passage of the probationary period, while others have a special department open to adapt the staff, and therefore everything ends with hiring. Models will also vary greatly when looking for qualified personnel and mass selection.

However, a typical type of funnel still exists. We will consider it in more detail (Fig. 1). The selection of personnel begins with a preparatory, zero stage. It includes drawing up a portrait of the ideal candidate and determining the search sources, that is, the placements of the ads. Although the stage is not displayed in the classic funnel, it is an important part of the recruiting process. The first step to being included in the funnel is to attract candidates, and this is the widest part. Here the employer announces a vacancy, publishes a resume at various sites. The second stage is engagement, which includes the processing of incoming responses, the initial acquaintance of candidates with the company, corporate culture, and brand of the employer. The recruiter makes contact, talks about the benefits of work. This is a key point, because it "sells" vacancies, especially with spot selection. The third stage of the funnel is evaluation and selection. The HR manager works with the incoming "warm" stream of applicants who are already involved to some extent, are interested in the position. Screening is carried out based on the results of interviews and assignments, starting, for example, with small tests and ending with final interviews with experts or managers of the employing company. When evaluating and selecting, the main narrowing of the funnel occurs. Next, an offer is made to the final candidates. The last step is to get the final result: for most companies, this is hiring an employee. The final stage is the narrowest part of the funnel: you can see a hundred applicants, but more than three offers for one position are rarely put up. However, again, it all depends on the specifics of the vacancy, the company and the market as a whole.
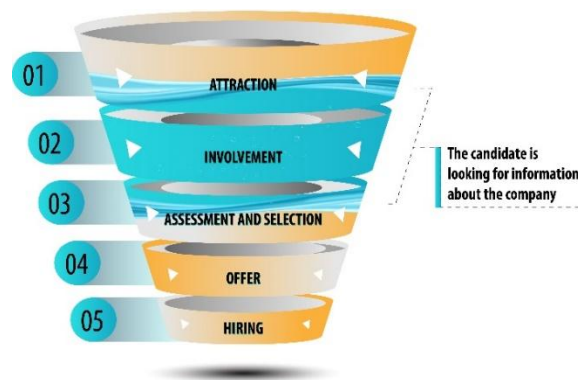

Fig 1. Recruiting Funnel

The model of the "recruiting funnel" describes the stages of interaction between the recruiter and applicants when closing a vacancy, each of which is digitized and subsequently makes it possible to evaluate at what stage the potential candidate is screened out and where the malfunction occurs.

Results. Digitization of the funnel may look as follows (Fig. 2). The funnel is clear and transparent, it shows the conversion at each stage of selection, and allows you to formulate new solutions. From this figure, it can be seen that the largest conversion is observed at the first stage. Further, this indicator is significantly reduced. There is a misconception that with an artificial increase in the first stage of the funnel, that is, the incoming flow of applicants, the effectiveness of recruiting increases. In the case of mass selection, this can really work, but for a targeted qualified search, this method will not work - it will only lead to financial and temporary losses.

The HR brand has a positive effect on the effectiveness of the recruitment funnel, and the technology brand for the IT industry. There is another option - the creation of a corporate university. So the employer will be able to increase the initial pool of candidates and rely on individual qualities and soft skills, developing other competencies already in the process of work. Various metrics can be used to evaluate the effectiveness of the recruitment funnel. There are no unified indicators, but they often use the time of filling a vacancy, that is, the number of days required to close it, or the time of hiring - the number of days between the final approval of the candidate and his exit to work. An offer acceptance ratio may also be used. Another advantage of the funnel: it can be shown to the client or manager so that he sees how much work is really behind the selection (Tikhonov, Fedotov and Chekan 2019). It happens that the personnel selection system fails. Using a funnel, you can determine where the problem arose - for example, at the stage of involvement. But involvement is a lot of steps, and it is not clear what exactly to look for the cause. Maybe it's a matter of negative reputation and negative reviews of employees? Or the reason is an illiterate search map: the recruiter posted a vacancy for mass selection on LinkedIn. Perhaps the requirements for the applicant do not match the prevailing market? There may be many options.

This is the main drawback of the funnel: to solve the problem, it is not enough to detect it. The funnel is not able to help identify the causes. She misses the relationship with other business processes and only indicates the presence of a "bottleneck", a clear discrepancy between the dry numbers and the expected intermediate results. This is a "litmus test" with which it is necessary to conduct further work.

There is another important problem: the funnel model does not take into account market changes. The funnel works only if we place ads in as many sources as possible, from which the stream of applicants comes to us. But the situation is changing: the candidate market is transforming into a job market. In pharmaceuticals, IT, and knowledge-intensive industries, more and more specialized specialists are required at the junction of professional fields. Companies are fighting for candidates who are not even in search. How to take all this into account in the funnel - is a big question (Nagibina 2017).
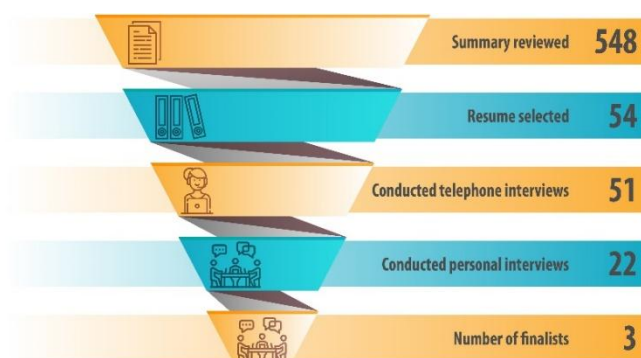

Fig.2 Digitization of a recruiting funnel

Discussion. The main goal of the maximum automation of recruiting is to reduce the burden on HR specialists in the mass hiring and training of personnel, as well as a higher KPI. To achieve these goals, several HR digitalization tools were allocated: The Applicant Tracking System (ATS 2020) and the LMS Learning Management System (E-learning 2020). These systems interact with employees and candidates using mobile applications, social networks and cloud technologies (Kuprevich 2018). Before the interview, the applicant is asked to fill out not a paper form, but an electronic one. It is difficult and not habitual for a modern person to write a lot with a pen, it's much simpler, more familiar and faster to check and electronic questionnaire. The employer gets the opportunity to process the received data faster and more efficiently. Such automation is introduced at all stages of hiring and training:
- instead of a group presentation, a video presentation is being introduced;
- instead of numerous interviews, assessments and other assessments of competencies, the candidate is invited to go through a quest in which he has the opportunity to demonstrate his skills;
- all employees undergo training through special portals that systematize training (Sharapova, Sharapova and Shvetsova 2017).

The introduction of digitalization in HR technology gives good results. The load on recruiters and recruiters is reduced, the selection funnel is improved, and staff turnover is reduced. An international study by McKinsey consulting company, conducted at the end of 2018, revealed that the digitalization of recruiting processes allows 26% to increase the productivity of recruiters. The contribution of these measures to the financial performance of the company was also calculated - their profit increases by 14%. Using a chatbot (voice robot) for mass selection, which makes preliminary screening of inappropriate calls and applications, allows up to 30% of calls not to be brought to recruiters, thereby saving their time and reducing the cost of staff recruitment by two to three times (. Thanks to the automation of staff recruitment, the term for closing vacancies, including in remote territories, was reduced from 30-40 days to one week (Strelnikova and Lembrikova 2019).

Digital and economics analysts predict the enormous impact of digitalization on the labor market. McKinsey Global Institute estimates that up to 50% of workflows will be automated in the world by 2036. As a result, up to 12.5 million of the employed population can be freed up and jobs will be reduced. A trend will begin to increase the difference in wage levels, which will result from the stratification of society by income level, and unemployment will increase (Masyuk, Vasyukova and Kiryanov 2018). Existing jobs will be replaced by high-paying jobs that require the skills to create and apply digital technologies, and low-paying jobs in cases where automation is not economically feasible. Thus, the impact of digitalization will lead to the emergence of new professions, and, as a result, to a shortage of sought-after personnel. But at the same time, it can be assumed that a high level of income in scarce professions will provide an incentive for potential employees to learn new skills and competencies. As a result, digitalization can be seen both as a threat and as the emergence of new opportunities.

The key competency of the digital age is the ability to analyze a large array of data. The introduction of digital technology leads to changes in staffing requirements and professional requirements. More and more noticeably, we are seeing a decrease in demand for professions related to formalized, repetitive operations. The life cycle of professions is reduced due to the rapid change of technology (Avdeeva, Andreeva and Afanasyev 2019). There is a transformation of positions, there are risk analytics, HR analytics, marketing analysts in connection with the automation of business processes. New professions are emerging. The requirements for flexibility and adaptability of staff, for the manifestation of "soft skills" - "soft skills" associated with social and emotional intelligence that distinguish a person from a machine are increasing. There is a growing demand for specialists with "digital dexterity" - the ability to implement new technologies in order to increase the efficiency of enterprises and businesses as a whole.

One cannot but say that advanced digital technologies have a positive impact on the labor market. Firstly, the use of modern digital work portals enables potential candidates to expand their professional and career opportunities through wide access to the databases of current vacancies (Kostikova, Skiter and Tarasova 2019). For example, on the Russian platform hh.ru already posted

more than 25 million resumes, the number of which is constantly growing. Secondly, digital platforms directly affect the increase in labor productivity, as they contribute to the selection of the most accurate profile of the applicant for the proposed vacancy. All this reduces unemployment. Thirdly, the digital revolution will contribute to the emergence of new professions and jobs that did not exist before. Fourth, thanks to modern technologies, it is possible to remotely work remotely, which makes it possible to increase the efficiency of employment of specialists from regions where there is a limited local demand for them. Finally, digital technologies enable workers to acquire new knowledge and skills using distance e-learning in order to improve their skills, master new professions or acquire new competencies. The widespread use of online education systems provides an opportunity for employees to develop additional competencies necessary for creating a career path in the digital era (Masyuk and Pankova 2019).

Conclusion. The era of digital technology transforms the minds of managers and dictates the need to search for new and adapt existing tools for managing human capital. Digitalization shows that a number of business processes are most efficiently done by the machine: conducting initial interviews and screenings that do not meet the requirements of candidates, psychometric characteristics of personnel recruiting according to his profiles and preferences in social networks, all this requires rapid changes in the HR field. Digital technologies increase the effectiveness of management decisions: automated recruiting, switching to virtual workplaces, personalization in management and creating for each employee a special environment for self-realization and development, engagement management, HR analytics, and performance management. However, no matter what digital technologies are used, it is human capital and its potential that is the main generator and manager of all changes.

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