HR innovation risk assessment

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Abstract. The purpose of the study is to identify the risks of automation and robotization of personnel management systems, the pace of which is increasing and it needs a balanced approach to their use, taking into account the well-known and new risks and constraints. Systematic automation of routine processes leads to a change in the structure of the workflow, making it possible to shorten the production cycle and improve the quality of standard operations with a predictable result, but it does not consider mental and social constraints. The author analyzes the main trends and innovations related to digital resources in personnel selection and management, giving new horizons for career paths, defines the essence of each of selection tools, reveals the existing and future threats in using artificial intelligence in the most common automated HR systems and modern digital instruments with signs of artificial intelligence. The classification of digital tools used in personnel selection was developed, and the possibilities of using these tools in the professional and service career development were analyzed. There is a strong need to formulate a strategic development model of the company using information systems that integrate corporate knowledge bases and the intelligent decision support system, which can eventually be transformed into the individual human development.

1 Introduction

Automation of some personnel management functions, which began in recent years, such as recruiting personnel and building a career, leads, on the one hand, to shorter process times and lower costs, on the other hand, new risks and constraints appear that are not obvious at the first stages when applying new technologies. Such risks include a significant increase in requirements for staff qualifications due to the reduction of traditional functions and the emergence of the new, more information-intensive ones, reduction in the number of personnel specialists who have the opportunity for personal, lively communication with employees. It can increase the alienation of the labor of company personnel, the lack of opportunities for team building, and reduced employment.

Changes in the content and structure of the labor process occur in almost all professions and specialties. The system automation of routine processes leads to a change in the structure of the work process, allowing you to shorten the production cycle and improve the quality of standard operations with a predictable result. This applies to both production and

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management processes [1]. The workflow changed as a result of automation becomes more saturated, intensive, requires higher qualifications and intellectual inclusion, which increases professional burnout of workers, as indicated in the work of Lambert, S. A., Herbert, I. P., & Rothwell, A. T. [2]. The education system is gradually being rebuilt to meet the requirements for digitalization of professional skills, but it is going quite slowly due to a high degree of inertia, which in this situation can be considered as a positive aspect and allows preserving the continuity of generations [3]. There are risks of loss of job security guarantees for graduates of higher educational institutions as a result of the lack of specific professional skills that allow a person to successfully compete in the labor market [4].

The use of information tools for personnel management allows for a new design of a professional and service career for employees, both in terms of personality and in the context of strategic goals of a particular company [5]. The implementation of strategic plans of organizations largely depends on qualifications of employees. Human resources are an important component of any organization and they play a key role in strategic planning, since the implementation of the planned activities requires a certain, often unique qualification, the presence or absence of which may determine the success of the entire project. That is why personnel selection becomes one of the key components of providing the organization with qualified personnel corresponding to the goals of projects.

The advent of the Digital era requires revising the rules of doing business, updating management models that will provide, in the long run, increased productivity and labor efficiency. Digital is the use of digital resources and channels, such as contextual advertising, website development and web design, necessary to achieve the goals of the organization. Information technologies create new opportunities not only to accelerate personnel selection, but also to provide more accurate selection, based on the availability of the required level of competencies, labor potential and development opportunities [6]. The transition of many companies to strategic management takes the work of HR specialists to a new level, where they must use modern digital tools for searching and selecting personnel [7].

2 Methodology

Recruitment in the context of the large-scale use of digital technologies in personnel management is becoming an important stage in strategic career management. The emergence of new personnel selection tools challenges researchers to justify a modern personnel management system using digital technologies. [8] Systematization of key aspects of such tools in personnel selection characterizing digital HR – trends and technologies allows using personnel selection in career design (Table 1).

HR-branding of the company is one of the main tools of the modern HR-industry. Using it you can attract the most valuable personnel, retain the best employees and increase everyone's involvement in the process. However, it is necessary to note the complexity, the duration of the development and application of this tool. Small and medium-sized companies, especially start-ups, most likely will not be able to use it to attract the best candidates. There is a segregation of companies not only by financial capabilities of the development and implementation of this powerful tool, but also by qualification restraints of personnel specialists, who for the most part do not have specialized education.

According to research on the LinkedLn social network, more than 75% of candidates study the company's reputation before submitting their resume (cited based on FinAssesment platform data) [9]. At the same time, 69% of candidates are not ready to get a job in the company if its image and reputation do not meet the stated requirements.

Table 1. Description of modern digital tools and trends

Digital tools and trends	Description of the tool, opportunities for use in career design
HR-branding	Form interest, loyalty and productivity of both the company's customers and its employees. The key aspect is EVP (Employment Value Proposition) - a value proposition for staff, i.e. competitive advantage in the labor market in attracting and retaining successful employees.
SMART-recruiting	Search for new employees through web communities and social networks; use chat bots that determine the interest of the applicant to the proposed vacancy.
E-learning	The tool allows for ongoing training, including improving skills, knowledge of information systems. Training is conducted in cloud applications and in mobile versions of work sites and instant messengers. Access to trainings, webinars, which allows you to provide quickly and maximally useful information on personal requests.
HR analytics	The tool allows you to digitize and automate repetitive administrative operations based on data from different levels.
Automation and HRIS-systems	Systems created to automate the process of searching, hiring and managing personnel. HRIS - (human resources management system) is to develop, implement and control human resources management software.
Agile Management	Organize project teams, which perform their task and are aimed at a specific result. The tool allows you to speed up the decision-making process, as well as identify inefficient employees. It forms the degree of control and motivation of staff. Employees with a specific set of competencies effectively fulfill the tasks assigned to them.

Key aspects of HR branding are:
- The uniqueness of the offer of the employer - how we differ from other companies and what we are ready to offer the candidate;
- A clearly defined mission and strategy of the company - the creation of non-standard content in social networks, blogs and media, the uniqueness of the brand, the description of the main goal of the company.
- HR sites - launch a career site with a detailed description of the history of the company, the presentation of photographs of the workplace and the description of career opportunities. These sites form the image of the employer in various communication channels.

Each of these micro-tools requires qualified and systemic use, specialized competencies not only in the field of personnel management, but also programming, marketing, business planning, strategic management skills, which, in turn, poses quite serious risks for their effective use.

Smart recruiting. The most noticeable for applicants were automated recruitment systems, when almost each of the applicants was faced with certain artificial intelligence. It is becoming more and more difficult to break through the wall of robots and bots during employment; there is a unification of requirements, which most often differs in requirements that are too high or do not meet actual conditions. Personal life and information on social networks have ceased to be personal data in personnel selection. Constraints of automated recruiting are more related to human mentality and social capabilities. We can distinguish the areas of recruiting that have received the greatest distribution in recent times, but require rethinking and new approaches:
- Promote vacancies through advertising on social networks and through targeted advertising;
- Use recruiting robots in chat bots. A recruiting robot is able to automate most of the recruiting process associated with assessing knowledge and skills, considering and

inviting interviews, but the loss of worthy candidates with this type of personnel selection becomes more and more obvious;

- Check the candidate through online tests, remote security verification services, intellectual analysis of resumes by keywords and much more that do not allow the human person to prove his viability and potential.

E-learning is a tool that allows you to train staff on-the-job in a short time. E-learning means using multimedia Internet technologies to improve the quality of learning. E-learning is designed to educate users in real time.

People play a central role in intelligent production systems for two reasons: their knowledge is necessary to create and improve intelligent production systems; and their motivation is very important to identify and address the causes of problems that may arise in order to prevent them in the future. Therefore, to achieve these two goals, adequate training methods are needed since they will expand capabilities and motivation of employees.

- Cloud technologies provide access to a wealth of information, which contributes to a much more efficient communication between management and employees [10].
- Significant trends in e-learning include:
- Online distance learning courses, webinars and trainings from leading HR specialists;
- Individual training taking into account the personal development plan for each employee;
- Gamification - the introduction of a game mechanism in the learning process, allowing the employee to associatively perceive information through quests, passing tests and quizzes;
- Evaluation of ROI - an indicator that reflects the effectiveness of investments, and tracks changes in key indicators that are determined considering the goals of the project;
- Introduction of a mentoring system.

The development of digital learning technologies allows you to design individual development paths that combine personal and corporate interests. At the same time, we should consider significant constraints in distance and online learning - the need for high personal motivation of the student, formalization of educational technologies, the lack of transfer of personal experience and opinion, an individual approach to learning, the educational aspect and much more, which makes educational process two-sided and unique. It can be assumed that full-time education with the development of digital technologies may eventually become elite education.

HR analytics: Big Data is a relatively new area that has been widely implemented over the past few years. Personnel management is carried out on the basis of analytical data using such a tool as a metric.

Comparative analytics can significantly reduce the recruiter's labor costs by uploading reports in real time. HR analytics is a tool that through applications allows you to develop analytical models for forecasting and prioritizing recruiting activities.

The obvious advantages of investing in Big Data development is that analytics is an excellent tool for collecting and analyzing data about employees, allowing building an effective development strategy for everyone and save resources. One of advantages of Big Data processing is the construction of trends based on previous experience of both the employee and the most typical patterns of behavior, development, and ways to achieve efficiency. Reduced company losses associated with re-recruitment, will be reduced by almost half. However, the scope of Big Data Analysis is heavily focused on long-running enterprises that require optimization. If we keep track of each employee and design his career, the possibilities of innovative, non-standard development are minimized, when the most daring breakthrough solutions can be found in these unstructured, unexpected, related

areas, which provide opportunities for gaining leadership positions.

Automation and HRIS systems. This year, the global recruiting software market reached $ 2 billion. Companies are eager to introduce HRIS systems (human resources information system) [11], which automate personnel selection and management. Most often they invest in HCM (human capital management) systems and ATS (applicant tracking systems) modules [12]. It points to the fact of global automation of the HR sphere, which provides both new opportunities and new risks. The use of such information systems makes it possible to select the best candidates, which in turn raises another question about the fill of the labor market by qualified specialists, the level of wages of jobs offered for employment. The possibilities to increase the existing level of labor quality in a certain territory are limited by the presence of the developed education system and opportunities, desire to develop a certain, sufficiently large inert part of the population. In addition to these risks, it is necessary to bear in mind the consequences of the transfer of part or all personnel management functions, which combine not only economic, but also managerial, social, psychological components, the consequences of which are difficult to measure, but sometimes they are more painful than economic consequences.

In other words, HRIS can be considered as a way of software for large and small enterprises that can optimize a number of activities, including those related to human resources, accounting, personnel management and remuneration. HRIS allows companies to more effectively plan their personnel costs, as well as manage and control them without having to allocate too many resources to them [13].

In most situations, HRIS can lead to increased efficiency, as a result, the productivity of both employees and managers should increase and become more efficient, but decisions made must also be improved in quality, which cannot always be guaranteed.

The personnel department in the modern organization is considered extremely important for the entire organization. Its many functions serve as a providing background for the company, accompanying all management, production and economic processes, from finding qualified and talented personnel to training and development, opportunities for enriching employees and much more. Since labor costs are the most significant expense for most organizations, human resources help companies make the most of this important asset [14].

For optimal functioning, human resources departments are gradually transforming into trans-corporate systems, provided with necessary tools and resources, which requires scientific systemic justification to minimize possible risks and threats.

Agile Management. The Agile method (flexible management methodology) involves all participants with familiar competencies in the project development. This approach allows us to understand that they all work for the same ultimate goal - a quality product for their customers.

The main principle of the agile approach is to build a project team, which performs its task and is aimed at a specific result, that is, it works in short cycles. This tool allows speeding up the decision-making process, as well as identifying inefficient employees, forming the degree of control and motivation of staff. The goal of this approach is to identify employees with a specific set of competencies and identify them in project teams. This type of career selection and design is suitable for a very limited type of project teams. It is not applicable in production, rigidly structured systems, and it can cause chaos instead of increasing the efficiency of the process when it is used inefficiently.

3 Results

Modern management is interested in optimizing the recruitment process and digital tools open up new opportunities for HR specialists to build the career of specialists [15]. It is

important to correlate each tool with the strategic goal of the company and apply it taking into account risks and constraints specific to each management system, which will allow you to quickly find a valuable employee and keep him in the company. A multi-factorial approach to personnel selection using digital technologies creates prerequisites for organizations to repeatedly improve the performance of personnel departments and contributes to the competent implementation of management functions in the organization as a whole.

We propose to formulate the strategic development model of the company using information systems that integrate corporate knowledge bases and the intelligent decision support system, which can eventually be transformed into the individual human development. However, the development of such a model requires a theoretical and methodological justification to use corporate knowledge bases, develop end-to-end information support and a structure based on the principles of system modeling.

The proposed model can develop a software package project for managing labor potential in organizations, large enterprises, educational centers, universities, one of the significant elements of which should be a personnel selection system. The software package is necessary for planning career paths for employees using corporate knowledge bases in accordance with the organization's development strategy (Table 02).

Table 02. Career development using digital technologies

Career development	Design career and professional growth based on the corporate knowledge base and Agile management, E-learning
Professional development (young specialist)	Select employment options, adapt, train using the corporate knowledge base at the enterprise, Agile management, E-learning
Staff recruitment	SMART-recruiting is included in the corporate competency model; use automation and HRIS-systems, HR-branding
Training	Design professional path options based on HR branding, E-learning
Career guidance	Choose a professional group using E-learning and a corporate knowledge base and competencies

Integration of corporate knowledge bases using systematic modeling of educational paths will contribute to the formation and development of professional and service career of specialists, a significant part of which is the personnel selection.

The presented tools are already used in many organizations both in Russia and in the world. However, the management system needs to develop effective methods that would allow, with sufficient justification, applying them in organizations of various forms of ownership and scale of activity.

Thus, the introduction of Digital-innovations in business and production is a strategic necessity today, since modern digital technologies can significantly speed up the recruitment process, as well as reduce the complexity of the selection process. However, the large-scale use of artificial intelligence systems poses new challenges for personnel management due to many risks and constraints that require system solutions.

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