Mobile Apps, Websites and Programs as a HR Specialist's Toolkit in the Digital Economy

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ABSTRACT

The article reveals topical issues of using information technologies in the tools of a specialist in the field of personnel management in the digital economy. The trends of the labor market in the digital economy that affect the formation of tools for an HR specialist during the implementation of digital technologies are identified. The role of the Internet and specialized mobile applications, websites and programs for the recruitment, selection and assessment of personnel not only when hiring, but also in working with the existing personnel of the organization is emphasized as a leading trend. The positive and negative aspects of using mobile applications, websites and programs as a tool in the work of a human resources specialist are determined. The article demonstrates the problematic field of the presence of in-demand professions and the search for qualified personnel, as well as the role of modern information technologies in the implementation of the function of providing an organization with personnel in the digital economy. The importance of digital technology in the implementation of the work of an HR specialist is emphasized, in particular, the use of contemporary sites for recruiters, personnel assessment and developed mobile applications and programs based on them.

Keywords: *digital economy, digitalization, digital technology, digital security, mobile application, website, program*

1. INTRODUCTION

The relevance and novelty of the problem of digital updating of the tools of professional activity of an HR specialist are caused by the processes of digitalization, informatization and the growth of automation of the modern Russian economy. Human resources specialists are no exception, they are actively implementing new digital technologies in their work in the segment of recruitment, selection, adaptation, assessment, and development of personnel. The McKinsey Global Institute estimates that in 15 years, up to 50% of all work processes will be fully automated. Based on this forecast, it is logical to assume a mass release of workers, job cuts, as well as a pronounced degree of differentiation in pay levels. The stratification of the labor market that will follow the expansion of information technology will lead to a situation where "middle-level" jobs will be actively replaced by low-paid and high-paid ones, depending on the level of application of digital technologies. One of the likely consequences of the global digitalization of the economy will be the stratification of the population by income level, an increase in the unemployment rate, especially in single-industry towns and for people with disabilities [4]. These negative phenomena are almost inevitable, but there are also positive aspects to this global process. Thus, the introduction of information technologies in all spheres of the economy entails the emergence of new professions and

jobs that did not exist before, such as a tutor, Big Data administrator, and Big Data analyst. As a result, the real situation related to the shortage of personnel for current professions may soon appear [12]. That is, if there is an opportunity and desire for retraining, each retrained specialist eventually has a chance to take a highly-paid position related to the use of digital technologies [2]. In fact, this situation is beneficial for employees and unprofitable for employers. Currently, there are objective difficulties in training such employees. On the one hand, there is a certain shortage of scientific and pedagogical personnel, specialists in the departments of practical training [13], and not theoretical orientation, in particular for practice-oriented professions. On the other hand, such a shortage of personnel is primarily due to the lack of motivation of employees to master their competencies in the context of digitalization of the economy, as well as the frequent resistance of older people to changes in the implementation of software products [14]. Among other things, the role of the pedagogical potential of digital technologies in scientific and methodological literature is practically not affected [11]. At the same time, it is difficult to overestimate the need for their use in the modern recruitment process.

Nevertheless, information technologies are actively being introduced into the practice of specialists at all levels. Some of the latest 'innovations' in the field of personnel management are mobile applications, websites and

programs. They take into account many of the organization's needs - recruitment and selection, assessment and development of personnel, and mobile applications, websites and programs can be used as a platform for searching for specialists in "scarce" professions, when other methods of selection have already been exhausted [5].

The purpose of the research is to study the features of an HR specialist tools in the digital economy.

The research hypothesis is the following: expanding the capabilities of an HR specialist's tools will have a direct productive impact on improving the effectiveness of the organization's personnel management in the digital economy.

2. BACKGROUND

The main theoretical sources are the works devoted to the problems of personnel development management in the digital economy (Belonogova E. I.). Innovative forms of organization of work on human resource management of the organization (Shekurova M. M., Latypov Z. Ya.). Current state and prospects of development of cloud technologies in Russia (Sobolev A. Yu.). Cloud-based human capital management systems (Noskova K. A.) and cloud technologies in the personnel management system (Zakharov D. K.). The use of digital technologies in the selection and assessment of personnel (Rytova E. V.,

Lukashina A. S.). The study also took into account gender trajectories of personal development as a factor of effective personnel management in the context of digital economy (Gasparovich E. O, Tokareva Yu. a.).

The study was conducted in three areas and made it possible to consider in unity: mobile applications, websites and programs as tools for HR specialists in the digital economy.

2.1 Mobile applications as tools for professional activity of an HR specialist

There are a sufficient number of mobile applications that help HR specialists find potential candidates for vacancies in the global economy. However, in our country, they are not yet widely popular, although, as world practice shows, their potential is great. For this reason, most of these applications do not support the Russian language. However, it was noted that due to the high degree of potential and to some extent the inevitability of their widespread use in Russian companies in the future, it is necessary to consider some applications that are already popular in the business environment abroad [9]. The above mentioned does not mean that such applications are not created in Russia, for example, in table 1 of the six applications reviewed, four are developed by Russian specialists.

Table 1 Overview of mobile apps for HR specialists

Mobile application	Characteristics	Cost
1. Jobvite, staff search application	1. Developer: Jobvite Inc. (USA, California, Burlingame). 2. Key features: integration of the app into the global recruitment system. 3. App features: - it is integrated into social networks (LinkedIn, Twitter and Facebook), the relevance is due to the fact that many job seekers are looking for work through social networks, communities, friends, groups, and can easily offer vacancies to their friends and acquaintances that they have seen; - enables sending job information in one click; - this app is especially useful for an HR specialist, as it contains the function of "tracking the ways" of getting recommendations from the applicant's friends. This "tracking" helps the HR employee better understand the candidate and form an initial opinion about him or her. 4. The main drawback for Russian users: the app is not russified.	500 - 1500 USD per month
2. BeKnown, staff search application	1. Developer: Monster.com (USA, new York). 2. Key features: it works as an aggregator of social networks and email services, resulting in a kind of "super network" where one can post vacancies and share company news. 3. App features: - job seekers can share job links with other users; - the gamification mechanism is used, and the user gets "badges" for a large number of "business connections"; - obvious advantages are scale, support of 19 languages (including Russian), and the application is provided free of charge.	free

continuation of Table 1

3. Experium, staff search application	1. Developer: "Geliosoft" (Russia, Moscow). 2. Key feature: all applicants' resumes are transformed by card type with 25 fields (by meaning). 3. App features: - it works as a recruitment tool from the beginning of the search to its successful completion; - significantly easier search makes it possible to find a suitable candidate quickly; - integration with recruitment sites, as well as links to social networks and mass mailing lists; - easily integrates with the MS Outlook calendar and the company's corporate website; - an obvious advantage is the function of access to the HR network - a service that enables communication between recruiters. 4. The main drawback for Russian users: very high cost.	50000 – 300000 rubles
4. Staffim, staff search application	1. Developer: Russian startup "Staffim" (Russia, Moscow). 2. Key features: integration of the app into domestic recruitment sites. 3. App features: - placement of vacancies on several HR portals at once, and new responses are sent to the smartphone with notifications; - it is integrated into the mail servers, i.e. one can maintain a working correspondence with the candidates; - it has its own database of applicants; - work with QR codes to find the right candidate profile quickly; - eliminates the possibility of re-saving the questionnaire of the same candidate, which prevents overloading the database of applicants. 4. The main drawback for Russian users: the app does not have a foreign information base.	1000 - 19500 rubles per month
5. Pruffi Friends, staff search application	1. Developer: Pruffi Friends (Russia, Moscow). 2. Key features: ideal for scarce professions or complex vacancies (for example, Synchrophasotron assembler), as well as firms doing business in a specific field (for example, art painting). 3. App features: - provides search of candidates in social networks (including Russian networks); - the purpose of the application is to send users information about vacancies on a daily basis, which can then be "reposted" and sent to other users; - it uses the mechanisms of gamification; - a user who recommended a friend suitable for an employer receives a money transfer, as a result, this is a kind of free recruitment in the network. 4. The main drawback for Russian users: an inconvenient interface, the catalog contains a mix of vacancies from different industries and is represented by a single list.	negotiable
6. HeadHunter, staff search application	1. Developer: HeadHunter (Russia, Moscow) 2. Key features: a widely used application that covers dozens of Russian cities, with high-quality functionality and a clear interface. 3. App features: - for the user: create auto-search by keywords and categories; job seekers can leave feedback; vacancies are sorted by category; - for the employer: personal account, all resumes are saved into the database; - the advantage for job seekers and employers is a wide coverage of the territory of Ukraine, Belarus and Kazakhstan. 4. The main drawback for Russian users: - unlike the site of the same name, the application does not have the ability to edit the vacancy and resume online, but through the main page only; - focus on the applicant, the recruiter can use the application mainly to solve the problem of monitoring the level of wages in the industry, field of activity.	free

It may be concluded that the mobile apps analyzed and listed earlier (except for HeadHunter) are actively starting to gain popularity in Russia.

As an addition, we may note that in foreign practice there are applications that are already quite popular, and, accordingly, have a chance to take a certain place in the Russian market in the future. Experts consider Worki and Huntflow as applications most promising for integration into the Russian digital economy.

Worki application gives an opportunity to find employees based on their place of residence, and in a fairly quick time. When registering, the geolocation function is used, and the seeker sees first of all those vacancies that are located near their residence. This type of search is relevant for public catering companies, retail chains, communication salons, and consumer service companies. Such companies have vacancies with not too high earnings, so it is taken into account that the applicant may be attracted by the opportunity to work near home [3]. Also, for an HR specialist, this application may be important when they need to recruit staff for a certain point of sale. The registration form in this application, unlike many others, is very simple: a code is sent to the mobile phone number, after receiving it, the HR specialist can immediately add a vacancy indicating the location of the company. There is also a function of chatting with job seekers. According to the manufacturer, one can find an employee in one day, although this, of course, will have a strong dependence on the town (area). The obvious advantage of this mobile app is that it is free, but there are also paid functions - for example, publishing vacancies over the package, highlighting ads among others.

Huntflow application integrates all job responses from different sites, forming a single database. The key function is to delete repeated resumes. The app has a joint interview function for the type of online conference. Huntflow was mainly created as a tool for forming the company's personnel reserve [2].

2.2 Websites as tools for professional activity of an HR specialist

In the modern conditions of digitalization of the economy and personnel management, websites and programs come to help in the successful use of mobile applications as tools of an HR specialist. It should be noted that almost all mobile applications use from 20 to 50 sites with resume databases (job.ru, rabota.ru, zarplata.ru, hh.ru, joblist.ru, rabota.mail.ru, rjb.ru, resume-bank.ru, resuminka.ru, job.ws, etc.). Most modern systems can adapt to the user, specialization, company scale, and integrate with the "1 C" platform, which is significant for Russian companies.

2.3 Programs as tools for professional activity of an HR specialist

Programs, along with applications and websites, are becoming an important part of the HR specialist's toolkit. We will highlight the most popular of them in the Russian digital market, determining what is the practical use of using them in the activities of an HR manager: "E-Staff Rekruter", "Experium", "Rekruter", "Rezumaks", "Staffery 2000", "Oracle Taleo Cloud Service", "Microsoft Dynamic CRM Recruitment Agency", "1C: Predpriyatiye 8. Kadrovoye agentstvo", "Molga (SAP)".

The program "E-Staff Rekruter". oldest and most popular software in the digital market. It can be used as a complex program for an HR department employee and as a universal tool for large recruitment agencies. The Internet module simulates human actions, saving time and effort on filling in forms and processing results issued by sites. The options include automatically publishing vacancies on job search sites (there are more than 40 of them in the main list) and collecting responses from job seekers. The program keeps records of clients, vacancies, and applications [6]. There is a function for sending resumes and messages using customized templates. It is quite convenient to search for resumes by the specified criteria. For the management, statistics are kept on the work of the recruitment campaign and on the employment of employees. Of course, there is a function for importing candidates' resumes via email services and Word or OpenOffice documents, and integration with other systems (Boss-Kadrovik, 1C, SAP, WebSoft, WebTutor).

The usefulness of the "E-Staff Rekruter" program is in automatic placement of vacancies, search for resumes on professional portals.

The "Experium" program. The program is easy to use, it takes into account all the features of the work of HR specialists. Service features make it possible to publish and analyze vacancies on popular sites, collect responses directly from the program, create and maintain a database of not only candidates, but also of the company's own specialists [6]. It is used in two versions: as a recruiting program, and as a full-fledged program for managing internal resources. The program can store data about the company's organizational structure and employees, work with arrays of documents in text and image formats, and generate reports on any parameters. The Experium calendar syncs with Outlook, Mozilla, or Google calendar.

The use of the "Experium" program is that it provides a full cycle of conducting recruitment projects.

The "Rekruter" program. It was created to work with a large number of vacancies and customers. The developers clearly saved on design, so the program is not able to impress the imagination. But at the same time, it is quite useful in working with vacancies and job seekers. "Rekruter" enables keeping records of all information about candidates, employers, interviews and tests, payments and contracts, recommendations and letters. The "benefits" of the program include organization of competitive selection, rating of candidates and employees,

automation of business correspondence, the ability to integrate with the website, simplification of control over contracts and payments, and a database convenient in monitoring [7].

The benefit of using the "Rekruter" program: it is designed to work with a large number of vacancies and customers.

The "Rezumaks" program. At first glance, this program barely skipped the artisanal level of development. In fact, the software can be pleasantly surprising by its obvious simplicity and functionality. It provides for the creation of a section on the company's website that can automatically post vacancies, accept applicants' questionnaires, and conduct preliminary testing. Basic options: notification of new candidates, new applications, or interviews. Automatic email response, available data search by specified criteria and keywords. And the main advantage is a cloud service, where there is no binding to specific machines: work from home, on the way, from another office. We can also note the multilingual interface, support for HR-XML, the ability to configure several system levels, when each user has individual access to the functions that are provided to them [5].

The use of the "Rezumaks" program is that it provides an online service for HR managers and job seekers.

The program "Staffery 2009". The program significantly simplifies the work of the company's HR specialists. In addition to storing personal data, it makes it easier to search for employees by manually selected criteria quickly. It also allows employees to make changes to their personal profile or resume themselves. The app is certified by Microsoft during testing of partner products.

The benefit of using the "Staffery 2009" program is that it is designed to manage data and track information about the education, professional experience and skills of employees.

The program "Oracle Taleo Cloud Service". The program is able to accumulate all information about employees throughout their work history, easy navigation through the company's personnel potential. Based on the collected data, the program makes it possible to predict possible needs for specialists in various spheres (although the forecast is approximate). This is Oracle, so the interactive structure of the application is designed for companies of the widest scale and of any industry or sphere. Taleo is one of the world's leading users [8].

The advantage of the "Oracle Taleo Cloud Service" program is that it is one of the most comprehensive, advanced and latest cloud programs in the HR field.

The "Microsoft Dynamic CRM Recruitment Agency" program. As with any product of this developer, which is reverently loved by advanced users, everything is simple, reliable and even beautiful. Solution of typical industry tasks in the field of recruitment: selection of employees, automation of interaction between employers and job seekers, control of terms of execution of contracts, control of orders of company managers, etc. The obvious advantages include maintaining a common database of applications, contracts, vacancies, and the use of automated selection of applicants and candidates by the specified parameters. For HR managers, automation of their daily work is configured, the navigation is convenient, there is quick access to information about available vacancies, monitoring of task completion, etc. [6].

The benefit of using the program "Microsoft Dynamic CRM Recruitment Agency is that it is the use of opportunities, potential, tools of Microsoft.

The program "1C: Predpriyatiye 8. Kadrovoye agentstvo". The main function of the program is to automate daily work in HR services and recruitment agencies. The processes of evaluating professional knowledge, skills, and individual qualities of candidates are simplified as much as possible. When developing the software, the goal was to facilitate the business processes of recruitment agencies and HR services, and automate the relationship between clients and the company. The strengths include maintaining a common database of job candidates and automatic matching of the requirements of employers and the capabilities of job seekers. For the target audience, or HR managers, the software offers convenient information processing, increased efficiency in work management, and reduced probability of errors when working with clients [7].

The usefulness of the program "1C: Predpriyatiye 8. Kadrovoe agentstvo" is that this is the use of opportunities, potential, tools of "1C".

The "Molga (SAP)" program. For all corporate SAP users, even without a description, it is clear what the next program of this global system looks like. For the uninitiated, any description is unnecessary, and small and medium-sized businesses will still refuse to buy solutions from this company due to the unaffordable budget. The application, in addition to finding and selecting employees, includes the development of an optimal HR management model, the unification of payroll processes, accounting for the company/s strategy related to HR issues, and much more [1].

The advantage of the "Molga (SAP)" program is that it is the use of the capabilities, potential, and tools of the international company "SAP AG".

The large range of mobile applications, websites, and programs offered for analysis suggests that these types of applications are in demand as tools for HR specialists.

3. RESULTS AND DISCUSSION

A practical study of the use of mobile applications as tools for the professional activity of an HR specialist was conducted in the HR department based on Sberbank in Yekaterinburg in 2019. The study took into account gender trajectories of personal development as a factor of effective management in the conditions of digital economy [10]. It was decided to use the mobile app "Team.si". The functionality of this app is the following:

 - the app is a portal where several HR resources are combined;
 - personal account of each user;
 - internal social network for communication and exchange of experience and information.

The main goal and objectives for the practical study of the use of mobile applications, websites and programs as tools for professional activity of an HR specialist were: to increase the level of employee adaptation; to simplify the collection of feedback and information; to view courses for off -line training.

The results of implementation and efficiency of using the mobile app "Team.si" in the practice of PJSC "Sberbank" (according to the reports of PJSC "Sberbank") for the first year of operation, are the following:

- increase in the level of employee adaptation by 5.6 %;

- simplification of the collection of feedback and information by 10.2%;

- increase in the level of staff assessment by 8.0%.

When analyzing the foreign practice of using mobile applications as tools for the professional activity of an HR specialist, the research experience of the company "Bersin by Deloitte" is of interest. A note in WhatWorks (2016) summarizes the results of the study "HR applications for smartphones for employee training and search". The study found that 93 % of the 45 HR management solution providers (HCM) surveyed now offer HR apps and employee search functions on smartphones, and many of them are first developed specifically for mobile devices. These apps usually use specific smartphone functionality. This is, first of all, the ability to provide information of a small volume, more personalized, and do it instantly. This explains why employee training and search apps are most popular on mobile platforms. 73% of the developers surveyed offer mobile apps for conducting surveys related to training, quizzes, and employee evaluation. The study also shows that developers focus on mobile applications that allow them to make decisions on work issues (64%), manage productivity (56%) and self-organization of employees (49%). The employee search function, in particular, has become an object of increased attention.

According to the New Research Center article "Actual data on mobile technology use", 64% of all American adults have a smartphone, which is usually defined as a cell phone and performs many of the functions of a computer.

The study also found that the percentage of developers offering mobile applications for managing human resources and employee search differs depending on the functions and applications performed. According to the survey on the practice of using mobile applications, the study showed the possibility of using mobile applications as a percentage. So, 41% of the respondents say that they help to coordinate performance indicators. 35% of the respondents note that they enable coordination of personnel decisions on payment. 8% of the respondents say that they make it possible to coordinate requests for time off. 27% of the respondents say that they help manage bonuses and compensation. 24% of the respondents note that they help regulate requests for changing work schedules.

4. CONCLUSION

The results of the study show disappointing outcomes of brief testing of mobile applications, programs and sites that are relevant in Russia. If we look at the experience of Western companies, the development of mobile applications and programs from aggregators of recruitment sites is much higher there. In contrast to the Russian practice, today there is a variety of mobile applications abroad, and there are products with good development. For Russian users, applications that enable search for employees in neighboring countries may be useful. The most popular applications in the oil and gas industry are: "Oil and Gas Job Search" from the portal of the same name or "UK Job Search".

It should be noted that it is particularly important for recruiters of mobile applications of professional and social networks. The best among such networks abroad today is the "LinkedIn" app. This mobile app has a convenient menu, a very clear interface, and the functionality is not inferior to the usual web version of the site. Russian social networks, including "VKontakte", do not have such potential for HR specialists [9].

A large line of mobile HR applications is represented by products of companies in the field of career consulting. As a rule, they are created as memos for users that contain information, or tips for completing interviews, writing a resume, and more. Russian users can also use the app to refresh their current vocabulary. There are several similar applications in the "AppStore". In the "Resume Service Plus" app, one can watch video trainings on how to have a successful interview and write a resume. The "Interview" app contains a large number of questions in English with detailed comments on them and the ability to record the answers. One can find many brief resume writing apps from "unnamed" authors, such as "CV/Resume Lite".

Information apps, HR magazine apps, or online portals are also useful to keep on the mobile phone. It would be productive to have applications with the ability to read materials on the road from Russian HRM, "Rekruting News", and others, but unfortunately, Russian users do not yet have this opportunity. Western themed publications often have paid subscription apps, but there are also free versions. Among them are the "HR Management" app, the "HR News from People Management Magazine"app, and the "SHRM HR News" app. All three apps are free and interesting enough to explore. Russian publishers, for instance the magazine "Direktor po personalu", also have the paid applications (by subscription).

Thus, we can conclude that due to the use of information technologies in the professional activity of an HR specialist, the possibilities of performing almost all operations via a computer, including providing or receiving various information and performing transactions, are qualitatively and quantitatively increased. The study of the features of an HR specialist's toolkit in the digital economy confirmed the research hypothesis. Expanding the capabilities of an HR specialist's tools has a direct productive impact on improving the effectiveness of the organization's personnel management in the digital

economy. However, along with the advantages, it should be noted that digital transformation also carries certain risks. As we can see, the market for mobile applications related to the question of job search and recruitment is quite undeveloped. Today in Russia, unfortunately, the mobile app market is just beginning to develop, but it has a huge potential, especially when working with scarce staff.

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