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RECRUITMENT SOFTWARE TOOLS IN ENHANCING HUMAN RESOURCES MANAGEMENT EFFICIENCY

Teodora Lazarova

*Associate Professor, VUZF University, Sofia, Gusla 1
e-mail: Teodora.lazarova@yahoo.com
Bulgaria*

Abstract: The current paper examines the importance of the AI and automation in improving the efficiency of the recruitment process. The article trying to define some of the major tools and instruments for better visibility and non-biased prescreen of the applicants. The authors highlight some of the major advantages and biggest constrains in implementing and using recruitment software tools in the modern organizations.

Key words: recruitment, software, innovation, tools, efficiency

1. INTRODUCTION

HR software streamlines the modern workplace and set new company standards. Technology is making a massive impact on the human resources department. There are many models, metrics and tools trying to improve the process of gathering and analysing employee's data. Doubtless, human resources management tools improve workflow and managing and delivering tasks. In the same time, implementation of the human resources management tools its challenging and there is always a learning curve for the users. Automation of the HR functions improves the efficiency of the business. Implementing HR analytical tools can streamline all kind of processes from scheduling to recordkeeping and projections [1]. Based on Crunchbase, by August 2018, the amount of VC money invested in recruiting software start-ups, in 2018, crossed \$600 million [2].

Almost any HR process can be automated. The consequent tasks of pre-selection, recruitment, hiring, onboarding, releasing, organizing time shifts, compensation and benefits can be all automated. Automating all process in the HR field allows HR team members focusing on fields like employee's motivation, satisfaction, and engagement. AI for the recruitment tools is a fundamental category of the HR technology to reduce

redundant tasks and especially manually prescreening. Screening resumes and time management and efficiency are still the biggest challenge in of the recruitment process.

2. HR RECRUITMENT SOFTWARE TOOLS: TYPES AND MAIN CHARACTERISTICS

During the past years there are significant improvements in most of the HR tools. **Accessibility** is the first important characteristics. Due to some studies [3] most of the HR recruitment tools are developed and designed to resemble the traditional spreadsheets. Instead of the traditional spreadsheet where a single person is maintaining and accumulating data in more HR software the necessary data is accessed by more people. The existing data can be explored my management to become more beneficial for the organization.

In the fast-growing organizations keeping track of employee data is important. Paper-based systems are heavy to manage, and the sufficient tracking is almost impossible. Most of the administrators of HR teams face the challenge to manage vacation time, sick leaves, pay slips and qualification certificates. HR software provides the most important factors – **keeping employees data safe, accessible, and reliable**. This brings most HR departments to another level preventing HR people being part of endless administrative operations and enables administrators to exercise control and ensure better operations and workflow. Furthermore, allocating tasks is even easier as all team members are well informed by numbers, expertise of employees and their availability.

Communication is extremely important for the smooth operating of modern organizations. Most of the HR software consists of employees' directories and can provide constant communication between teams. With the sufficient level of communication, the delegation of duties and reporting are much easier to handle. Interdepartmental communication is enhanced by those tools which increase the employee's satisfaction, cohesion, and motivation. Members of the different teams can work on a common task and follow the productive workflow. HR software removes the need of the hectic activity of daily meetings, follow-up, and reporting. Most of the HR tools provide integration with variety of mobile applications and browsers which complete the whole HR circle – from pre-screening to hiring and retention of people.

One of the main goals when investing and implementing a new HR software is integrating technology and humanity [4]. Each tool that HR team uses, and implement should assist their main goal. Choosing the right HR technology can have a deep and significant impact on the company. There are varieties of tools that covers the initial steps of the recruitment process.

2.1. Job aggregators

Job aggregators and job boards are crucial for recruitment cycle and represent the 48 % of all new hires [5]. Some of the most popular are *Indeed*, *CarrerBuilder* and

Google for Jobs. *Indeed* made the significant database with of 100 million and becomes the biggest source for external hires [6].

2.2. Applicant Tracking Systems

Applicant Tracking Systems are may be the most popular recruitment software adopted in the business. Some statistics show that almost 90 % of the large companies and 70 % of small and medium businesses use ATS. During 2019 there are growing amount of integrations and based on Ongig [7] report the most popular ATS are *Greenhouse Software*, *Workday* and *Taleo*. *Greenhouse* believes in structure hiring and interviewing approach, *Taleo* has 23 % market share and *Workday* is leading vendor for mid-market and large enterprises.

2.3. Testing and assessment tools

According to Mondal [8] 57 % of the companies use preliminary assessment tools to assess the skills and knowledge of the applicants. Technical assessment is a common practice in the recruitment process of software developers. On of the most popular instruments are *HackerRank*, *pymetrics* and *Selfmanagement* group. *Pymetrics* claims that they implement bias-free algorithms which can match applicants based on neuroscience gamified tests.

2.4. Recruitment CRMs

Recruitment CRMs gain popularity with the rise of recruitment marketing and this tool becomes fundamental for attracting, engaging and hire candidates. *SmashFly* provides function to maintain unique employer branding, *Avature* is very flexible SaaS platform with more than 650 customers while *Ascendify* integrates machine learning and predictive analysis as a key factor for recruiting.

2.5. AI and Automation tools

More than 60 % percent of the CEOs believe that cognitive analysis and computing can drive a significant impact in human resources management. AI for recruitment is the implication of artificial intelligence which is automating some part of the recruitment process especially redundant and highly- repetitive tasks. The huge demand of the hiring needs support AI and Automating tools becoming on of the top recruitment categories for 2020. Ideal uses AI to prescreen and make a shortlist of applicants by using and analyzing the information from variety of sources – CVs, assessments results and performance analysis. In the same time, it works properly with the company's existing ATS which removes the need of adopting and learning new software. *Textio* examines one of the biggest challenges for the applicants – badly written job postings. One of the main features in the software is the function that

identifies biased language and provide better alternatives. *Zoom.ai* provides automated assistant software that scheduling meetings and transcribing calls.

3. ADVANTAGES AND DISADVANTAGES OF RECRUITMENT SOFTWARE TOOLS' USAGE

In today's business world recruitment becomes highly competitive. The companies, recruitment agencies and freelance head-hunters should compete to provide the best service on the market. In the same time, for almost any job post there are hundreds of applicants – relevant for the position or not. Improving recruitment productivity is crucial for improving the productivity of overall HR department. Manually pre-screening resumes is one of the most time-consuming and inefficient part of the recruitment, especially when between 70 and 80 % of the resumes for some roles are unqualified for the position. The average time of screening CVs and defining a short list of candidates is estimated about 23 hours for single hire [9].

All automated recruitment tools are extremely helpful for the HR function and increase overall efficiency of the department. The best AI technologies are designed to integrate quickly with the current recruitment technological stack of the company. In the same time, the usage of this software automate tasks, reduces hiring time, and boost the recruitment process.

The innovations in recruitment software are based on the AI implementation and optimization of the processes. The software learns which applicants will be successful or unsuccessful based on applicant's performance, tenure, or the turnover rates. In the same time, this software can reach public sources and be easily integrated with the existing software of the company.

Another important feature that is currently implemented are the recruitment chatbots. They are used to provide real-time interaction to applicants by asking questions about their previous experience based on the job requirements and providing feedback and suggestions for the next steps in the recruitment process. AI chatbots are implemented to provide better candidate's experience.

Using online recruitment tool can increase productivity dramatically. Most of the tools often include cloud technologies and allow user to connect and work from anywhere [4].

3.1. Advantages

There are several beneficial aspects of using HR recruitment tools:

✓ **Increase the social reach** – using recruitment tools can allow to connect and extract data from various media platforms like LinkedIn, Twitter, and Facebook. Most of the HR tools allow direct integration with many social platforms for easier and more convenient interaction.

✓ **Saves time in performing and tedious and repetitive tasks** – the overall recruitment process consists of plenty of tedious tasks – filling out forms and signing and attaching various personal data declarations. Recruitment software speeds up the whole process and reduce spending time in time-consuming tasks.

✓ **Improves communication** – in the recruitment process the response time of the participants in the process is crucial. This type of software has fantastic functions for automating welcoming mails and response mails. This enhance recruiters to improve their channels of communication and keep candidates informed and in the loop.

✓ **Allows streamlined data collection** – using HR recruitment tools allow companies to use and extract data from variety of sources – from job boards, through LinkedIn autofill profiles and candidate's website. Even more, there are software that can gather all candidate data published in any kind or source in the web which allows the recruiter to improve the overall process. HR tools allow to analyse the efficiency of the job board and provide analytics about vies, impressions and interactions.

✓ **Provides full automation to the recruitment process** – the recruitment tool can remove the manual aspect of recruitment. The repetitive tasks are removed and there is also an option for scheduling events. This allows recruiters to focus on having depth interviews and having the time to gain the impression about candidate's experience and their future needs and desires. Candidates want to move quickly and to have regular feedback from the company. Recruiting tools foster communication between interested parties and increase applicants' satisfaction [5].

✓ **Improves business sourcing strategies** – the software allows to reach more candidates and furthermore to analyse the success of the company.

✓ **Availability 24 hours** – the conventional recruitment process is available only during the working hours. The recruitment software is available all the time and can significantly increase productivity [4].

✓ **Keeps candidate's information organised** – all recruitment tools automatically extract, store and track applicant data. Applicants database make it easier for recruiters and managers and eliminates the possibility candidate's information be lost [5].

✓ **Significantly improves the quality of new hire through standardized job matching** – on of the most important HR KPIs metrics is quality of new hires. Using such a data becomes easier to collect and analyse by standardizing the matching between candidate experience, qualifications, and company's needs. This improvement in candidate matching leads to happier and more productive employees which are less likely to leave the company [10].

3.2. Disadvantages

There are also some critics and disadvantages in using recruitment software tools:

✓ **May face unconscious biases** – Amazon reported [5] some issues with the recruitment software and implemented biases. For instance, it was found that the

filtering function was favouring key words mainly used by male applicants which resulted in discrimination and make it more difficult to the female applicants. As all the tools are developed and programmed by humans there is always possibility for mistakes.

✓ **Could filter out good candidates** – one of the biggest disadvantages is that the preliminary set criteria can remove from the pipeline “thinking out of the box” applicants or find their additional experience not related to the job search.

✓ **Reports some technical difficulties** – some CVs and motivational letters cannot be recognized by the software due to some formatting issues. This can move out highly qualified candidates out of the pipeline without even notifying the HR team. The recruitment tools significantly improve the overall process but could not be relied on the final decision [5].

✓ **Recruitment software tools requires a lot of data** – for instance AI implementation needs a lot of data to learn how to pre-screen resumes and take adequate decisions as human recruiter. Sometimes this leads to several thousands of CVs for certain role unless the technology can take accurate decisions [10].

✓ **Lack of trust and scepticism of new technology implementation** – HR team is usually overload with suggestions for implementation the latest and the greatest technologies. Based on that, some experts are more sceptical to all new trendy suggestions which promises to make their workday easier. The professionals want to ensure that each implemented software will at least resemble the level of quality of their job.

The experts in the industry believes that the future of artificial intelligence in recruitment is augmented reality. Augmented intelligence is associated with the belief that the companies cannot fully replace humans only with the technology. The business should think how to create technology which can boost and enhance human efficiency. Using augmented reality will allows recruiters to spend more time on proactive strategic hiring instead of reactive responding to the market. The interviewers will gain more time to spend with candidates in person and analyse the culture fit instead of checking their technical skills. Augmented reality also allows to precisely measure and define all recruitment KPIs.

4. CONCLUSION

Efficient workflow faces endless risks dealing with legal implications, cross countries differences or misunderstood communication. The HR software ensure all necessary legal steps are taken and offers the read and accept options to protect all employees. Another important aspect of the HR software is analytical capabilities. The decision making related to the human resources management should be data driven. Most of the HR software could analyse raw data to verify projections.

In the next years finding and attracting the best talents will highly rely on the recruiter’s ability to automate and work intelligently and effectively. The technology

like AI and augmented reality is designed to optimize and automate some parts or the overall process of recruitment workflow, especially highly repetitive and redundant tasks. One of the main benefits of using recruitment software is automating huge number of tasks and significantly improves the quality of new employees by standardizes hiring model.

We should say that one of the biggest challenges is that recruitment software requires serious amount of data and the potential learned human biases. Doubtless, artificial intelligence and augmented intelligence will enhance the recruiters being more proactive and self-driven, will better define candidate's culture fit and improves the quality of new hires.

REFERENCES

- [1] DATAMATICS (2020). *How do automated processes improve HR recordkeeping?* Datamatics, June (available at: <https://www.datamaticsync.com/automated-processes-improve-hr-recordkeeping/>)
- [2] LEVER (2020). *New Report Reveals Essential Recruiting Benchmarks for Startups and SMBs*, LEVER, June (available at: <https://www.lever.co/blog/new-report-reveals-essential-recruiting-benchmarks-for-startups-and-smbs/>)
- [3] DATAMATICS (2020). *6 Brilliant Ways HR Software Can Improve Employee Workflow*, DATAMATICS, June (available at: <https://www.datamaticsync.com/6-brilliant-ways-hr-software-can-improve-employee-workflow/#:~:text=By%20keeping%20the%20employee%20data,qualifications%2C%20and%20availability%20of%20employees>)
- [4] ADVANCE SYSTEMS (2020). *5 Ways HR Technology Improves Efficiency in the Workplace*, June (available at: <https://advancesystems.ie/5-ways-hr-technology-improves-efficiency-in-the-workplace/>)
- [5] Gentle, S. (2018). *10 Benefits of a Recruitment Software*, ONREC, June (available here: <https://www.onrec.com/news/news-archive/10-benefits-of-a-recruitment-software>)
- [6] Rietsema, D. (2020). *The Pros and Cons of Recruiting Software, Applicant Tracking System*, June (available at: <https://www.applicanttrackingsystems.net/pros-and-cons-of-recruiting-software/>)
- [7] Mondal, S. (2020). *The 38 Top Recruiting Software Tools of 2020*, IDEAL, June (available at: <https://ideal.com/top-recruiting-software/>)
- [8] ONGIG (2020). *The Top 100 Applicant Tracking Systems in 2018*. June (available at: <https://blog.ongig.com/recruiting-software/top-100-applicant-tracking-systems-in-2018/>)
- [9] IDEAL (2020). *AI for Recruiting: A Definitive Guide for HR Professionals*, June (available at: <https://ideal.com/ai-recruiting/>)
- [10] Zakharyan, O. (2020). *Guide to Custom Recruitment Software*, YALANTIS, June (available at: <https://yalantis.com/blog/types-of-recruitment-software/>)