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Management in the age of artificial intelligence – do we need management in the modern world and is AI able to replace an HR manager?

Zarządzanie w dobie sztucznej inteligencji.
 Czy we współczesnym świecie potrzebne jest zarządzanie
 i czy sztuczna inteligencja jest w stanie zastąpić HR menadżera?

ABSTRACT

Artificial intelligence (AI) is a hot topic. Artificial intelligence-based technologies inspire enthusiastic optimism in some managers, fear and skepticism in others. But it is obvious, that increased emotional tension always accompanies new phenomena, the consequences of which are unpredictable. This paper discusses the interaction of AI, management and organizations. The article sets out the key approaches regarding the functioning of Artificial intelligence (AI), and touches upon the possibility of replacing HR managers with artificial intelligence. Also, the paper presents several options for the use of artificial intelligence in HR management.

Keywords system of artificial intelligence, HR management, information, management decision, recruitment process.

STRESZCZENIE

Sztuczna inteligencja (*artificial intelligence – AI*) to gorący temat. Technologie oparte na sztucznej inteligencji budzą u niektórych menedżerów entuzjastyczny optymizm, u innych strach i sceptyczny. Ale jest oczywiste, że nowemu zjawisku, którego konsekwencje są nieprzewidywalne, zawsze towarzyszy zwiększone napięcie emocjonalne. W artykule omówiono interakcje sztucznej inteligencji, zarządzania i organizacji. Przedstawiono kluczowe podejścia do funkcjonowania AI, a także poruszono kwestię możliwości zastąpienia menedżerów HR sztuczną inteligencją. W artykule zaproponowano również kilka możliwości wykorzystania sztucznej inteligencji w zarządzaniu zasobami ludzkimi.

Słowa kluczowe: system sztucznej inteligencji, zarządzanie zasobami ludzkimi, informacja, decyzje zarządcze, proces rekrutacji.

INTRODUCTION

Today, when artificial intelligence (AI) technologies are just emerging, it is useful for managers to assess their potential and understand how to use them effectively in their industry. It is worth noting, that in previous centuries, machines replaced boring and quite repetitive actions, and the undoubtedly advantage of this was the release of workers from routine work, allowing them to focus their resources on creative activities that machines are not capable of doing. Artificial In-

telligence can be found in many devices around us. The voice assistant Siri, recognition of pictures as the entrance to different websites like «I'm not a robot», or counting identical images on the screen – all this is just a small part of where AI is used. «McKinsey's» forecast of the influence of AI on the whole economy all over the world, is that AI will generate approximately \$13 trillion in global economic activity by 2030 (Bughin, Seong, Manyika, Chui, & Joshi, 2018). So, what

on earth is AI? Artificial intelligence is just a term for a technology, which is used to perform tasks that require a certain level of intelligence to achieve – to put it plainly, a device is capable of doing some of the things, that people can do. The results of a study by the World Intellectual Property Organization (WIPO) show that the fields of application of AI are diverse and this variety will only increase (WIPO, 2019). One wonders, what are the characteristic features of AI, that distinguish it from typical software? Its essential components are: speed of calculation, and storing an enormous amount of information and sophisticated algorithms. Now the growth rate of the AI market is higher by ten times than the growth rate of the mobile device market, and its further increase is promoted by increased attention from scientists and programmers (WIPO, 2019). Artificial intelligence is currently capable of recognizing human speech, 22 creating images and driving autonomous vehicles in heavy traffic. Artificial intelligence technologies offer substantial opportunities to improve HR functions, such as recruiting, payroll, reporting and so on (Butsyk & Demenko, 2016). Some scientists hypothesize, that in the near future, "machines" may become rational and become like humans. So, will it really happen? Will management be able to take advantage of AI while avoiding the negative consequences? Do we really need HR management in the modern world? And will the title of James Barrat's book *Artificial intelligence and the end of the era of homo sapiens*, prove prophetic? (Barrat, 2015).

1. SPECIFICITIES OF ARTIFICIAL INTELLIGENCE AND THE HR MANAGER

The first step, is to figure out whether AI is such an impeccable technology, that it could really replace a HR manager? What is so unique in this technology? I guess, that the answer to this question is pretty clear – intellect. Intelligence – is a collection of such things as: ongoing ability to learn and evaluate different flows of information, accompanied by the ability to use this information in the process of carrying out various tasks. A person receives information throughout his life, gains experience and uses it to make decisions. Something similar can be observed if we analyze AI. The creator of AI defines specific algorithms with which it can work and «trains» it, thereby showing which actions, based on the information presented are erroneous, and which are correct. Typically, managers will make tactical and strategic decisions based on data collected and process analysis. An algorithm or AI will also make decisions based on data, however this data set will be broader than that collected by a human and decisions will not be influenced by emotions. This will lead to more robust and comprehensive decision making (Novita, 2019). HR management, in turn, is how you are able to gain and develop a workforce which is talented, to help the company achieve its goals, as well as its mission, vision and different objectives (Schermerhorn, 2001). Another definition tells us, that HR management is about recruiting new

employees, managing employees, hiring employees and developing them (Wall & Wood, 2005).

I would like to refer to the analysis of Alan Turing, who was a British mathematician, logician and cryptographer. The main core of his test, is that the machine should mislead the person, and the person in turn, should not even know that he is dealing with AI. If the machine is able to demonstrate behavior that is not different from that of a human, then it can be called AI. Then again, if the machine in some way can outsmart a person, it does not mean, that AI is capable of replacing a person. It is obvious, that there are no similar people in the world, and we all are born with a special range of skills, creativity and spontaneity, which AI does not have (Moor, 2003). To my mind, AI and creativity are two very different things.

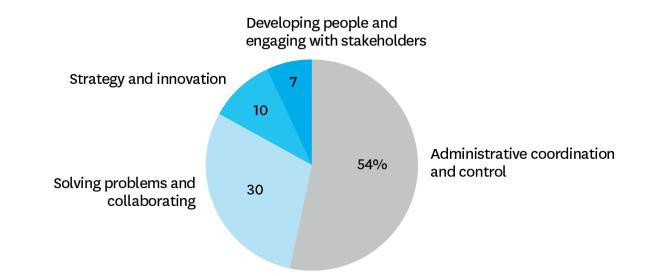
The competence of an HR manager boils down to such things as:

- Responsibility for various kinds of documents (awarding of labor contracts, agreements and so on).
- Monitoring and analysis of the labor market.
- Organization of, and active participation in, job interviews with potential workers, assessment of their professional qualifications and personal qualities.
- Analysis of demands from employees.
- Creation of a system of remuneration and motivation for employees.
- Personnel search (Pihur, 2019).

How Managers Spend Their Time

The bulk of it is spent on administrative tasks.

PERCENTAGE OF TIME RESPONDENTS SPEND ON CATEGORIES OF WORK



SOURCE ACCENTURE SURVEY OF 1,770 FRONTLINE, MID-LEVEL, AND EXECUTIVE-LEVEL MANAGERS FROM 14 COUNTRIES

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Figure 1. How managers spend their working time

Source: Kolbjørnsrud, Amico, & Thomas (2016).

According to this survey, we may see that, in general, the role of manager has been to supervise, enforce controls and have the authority to make decisions and solve problems in organizations.

Based on my personal findings, I can say, that HR managers focus most of their time on such things as scrutinizing the CV's of potential candidates and conducting interviews, in short – the recruitment process. Recruitment is defined as the practice of finding the right candidates who make up a candidate pool which fits an open job vacancy that

a company has. If the wrong person is hired, the organization can suffer from several economic losses instead (Stoilkovska, Ilieva, & Gjakovski, 2015). Artificial intelligence is pretty good with such things. Using AI in recruitment enables recruiters to reach larger candidate pool and decrease the amount of paperwork (Dickson & Nusair, 2010). A prominent example is the company «Pomato». Why this company? Because, it has created the «Resume-Analyzer» engine, that finds the right candidates for you in minutes. Pomato's program analyzes a resume based on how well a candidate matches your job requirements based on skills, roles, and level of expertise, and then ranks all of them. Moreover, when you have your top candidates, «Pomato» generates skills tests and interview questions that precisely match the criteria of your job requirements (Pomato, 2016).

A further example is the company «Unilever», which is one of the oldest multinational consumer goods companies and the largest producer of soap in the world. This company successfully implemented AI and changed its approach to the recruiting process significantly, using AI programs for assessments and online-video questioning, instead of face-to-face interviews. Unilever recruits more than 30,000 people a year and processes around 1.8 million job applications (Cowgill, 2017). To manage this problem, «Unilever» is using an online platform, which means candidates can be initially assessed from their own homes, in front of a PC, laptop or mobile phones. It includes game-based tests to examine people on different things, such as tolerance of risk and use of logic. Interviews with candidates are AI-driven too. In this case an algorithm (not a person) produces the analysis of candidates. It means, that AI is scanning a person, his answers to proposed questions, gestures, tone of voice and as a result – chooses potentially appropriate candidates (Eubanks, 2019). Approximately 70,000 person-hours of interviewing and assessing candidates 10 were cut out, thanks to the automated screening system (Feloni, 2017).

Another tool, that is widely used in HR management nowadays is the so-called «Humantic» program. It makes an assessment of the candidate through social media. This program is particularly interested in public information about the candidate, which is freely available, and does not intrude into personal information (like age, place of birth, race or private comments). It means that it focuses on content, what the general message of his page is and his posts (for example, how many positive words are in posts or vice versa – hate speech) (Ahmed, 2018). At the same time, from the position of job seekers, all of these decisions and tools do not make searching for a job easier: they still need to compose and post resumes on work sites, maintain pages on social networks, and attend face-to-face or video interviews. Therefore, solutions are required that allow the ways of searching and interacting with the target audience to be changed.

I would like to acknowledge, that AI can be very helpful in the area of the analysis of employee activity, because it can

track employee performance. Artificial intelligence tracks the employees' activities like browsing, emails, projects, and other tasks for a short period of time. It can report to administration and may help the organization to improvise different strategies. Besides, in this way Human Resources departments can gauge employee engagement and job satisfaction more accurately today than ever before. To my mind, this is incredibly beneficial considering how important it is to understand the overall needs of employees (Nikishyna, 2016). Furthermore, AI is really useful during training. The world is going on every day, and if you want to become a successful employee, you have to «keep your finger on the pulse» and to be informed about all the improvements that have been made in your professional sphere and the whole organization. That is why a key factor is training. Artificial intelligence can successfully plan, organize, and coordinate training programs for all members of the company. It can plan training/plans trainings according to the preferences of employees, using the most convenient timeframes. It can do it fast, without further ado and mistakes (Sushman, 2018).

2. CHALLENGES OF IMPLEMENTING AI IN RECRUITMENT

On the one hand it is obvious, that a company can't be successful, if it does not implement new technologies and processes. If a company successfully implements different technologies in real life, it means that this company will be more competitive. On the other hand, we have another important question to answer: «Will an employee want to work in a company managed by software?» It will not be difficult for AI to replace so-called “bad managers” or to outperform them. Robot-bosses will not show favoritism and will act objectively and professionally. At the same time, a real person-manager leads, inspires and empowers people and brings teams together. Artificial intelligence is unable to understand and develop human emotions and connections. It can replicate human intelligence in some ways but not “emotional intelligence”. Until software can manage and imitate different types of human emotions, such as leadership, sympathy, empathy and connecting with an employee, then HR managers will not be replaced by AI. Eliminating capacity for creativity and innovation would make the workplace a boring and dull place to work. Even though AI-based systems are extremely beneficial at recognizing talent, there are still some activities that should be conducted by humans, namely activities such as negotiations or appraisal of cultural fit.

Along with this we have one other question: «What is an employee's reaction to algorithmic decisions?». For example, if the boss asked the employee to work on a holiday or on his day-off, an employee may do this without complaint, just because the boss is always nice to him and they have a good relationship. Besides, it builds a relationship with the boss, because he or she was involved in the decision, something that does not happen if that decision is generat-

ed by an algorithm. But when the work schedule is generated by a program, an employee cannot empathize with it. And all that this employee is feeling- is just anger and a desire to resist. People respond very differently to decisions that are made by algorithms, rather than decisions made by people. But, to my mind, this question «a» so-called «double-edged sword», because sometimes there may be occasions where decisions are easier to make when they are made by an algorithm, especially when those decisions have negative consequences for people.

Besides, when you have a conversation with a chatbot program, it may lead to difficulties too. If a candidate uses slang or abbreviations, the chatbot may have difficulty understanding, and the candidate will be misunderstood and disappointed. The chatbot could also provide a response that doesn't quite fit the candidate question, leading to a negative perception (Murdock, 2018). Furthermore, most of the recruiting tools which involve AI are still not really perfect. For instance, an applicant screening system may reject a candidate profile simply because he doesn't meet the exact requirements which are mentioned in the algorithm of the AI. And the reason is because the potential candidate, probably, used a different font in the resume and the scanner wasn't able to read it properly. Due to such ridiculous examples, a lot of candidates can be rejected, while in fact they could be good specialists and be perfect for the position (Upadhyay, 2019).

As an example of failed implementation of AI in recruitment sphere we can give the well-known Amazon company. This company was full of expectations regarding its new AI tool to hire people, but unfortunately, they had to stop using it, because this program turned out to discriminate against women. That is because this program had been developed using male-dominated resumes, submitted to the company over a 10-year period, as a result – the program automatically screened out female candidates (Burke, 2018). The implication is that any algorithm is likely to be backward looking. The presence of past discrimination in the data used to build a hiring algorithm, for example, is likely to lead to a model that may disproportionately select particular workers. Actions using this algorithm risk reproducing the lack of demographic diversity, that exists in the data of AI. The biased outcomes of the Amazon hiring algorithm noted above was caused by exactly this common problem: because fewer women were hired in the past and because men had higher performance scores, the algorithm was selecting men (Cowgill, 2017).

CONCLUSION

As we may see, AI-based HR applications have the ability to analyse, predict, diagnose and become a more capable resource while focusing on employee needs and outcomes. It is obvious that automation of the processes of attracting and selecting applicants is accompanied by an increase in

the fear of HR specialists regarding their replacement, and the reduction of their relevance in the organization. To my mind, HR managers should be focused on optimizing a combination of human and automated work to produce a simple, seamless, and intuitive work environment. It provides them with time for creativity, intelligence, and empathy to deliver an enhanced candidate and employee experience. People are still needed, because they are key players. They not only develop and train AI tools, but also interact with them. Artificial intelligence has the ability to replace HR managers with the exception of personal interaction with future workers and colleagues. Artificial intelligence can't take into account all factors yet, as opposed to a human being. It is unlikely, that you will be excited by the prospect of the recruitment process being, turned into a Turing test. Imagine, that a person has a horrible migraine due to the weather conditions, or other issues, related to family problems, for example, which have a great impact on his mood and behavior at interview. Or how can AI understand the atmosphere in a team to make its work more productive? Motivation is inherent in a human being- a machine does not need a motive. An individual solves contradictions – AI is still unable 16 to do so. A person has intuition – and AI acts within the framework of a given program. For the effective use of AI, it is necessary first of all to divide the HR sphere into where the machine has an advantage over humans today, and where it is inferior to the human mind (Dushkin, 2019). So, now I can confidently say that AI, no matter how perfect it is, can not fully replace the HR manager. It is able to facilitate the implementation of various processes and actions and replace a person in routine or computational work. But the lack of the ability to create something new, as people do, does not allow AI to be on an equal basis with human intelligence. It can be drawn from this paper that whether or not there is a genuine need to implement AI should be carefully considered beforehand by organizations. In order to do that, it is important to study the implications for organizational effectiveness.

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