Artificial Intelligence Integration into Human Resource Practices

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ABSTRACT

Artificial intelligence is the recreation of human intelligence progressions by machines, especially computer systems. AI aids in assembling reliable and valuable insights at a quicker pace. AI systems are always accessible thus helping in faster decision making. Our discussion here is narrower, focusing on integrating AI into human resource management practices to help drive hiring, retention and employee development decisions. There are various ways that AI can boost everyday HR tasks, making them more efficient and effective. Each AI-driven resolution eases the workload of HR professionals and enhances overall employee behaviour. AI programs complete the majority of low-value HR tasks so that more attention may be focused on the tactical scope of work. AI should help the HR function integrate more nearly with other corridors of the business, particularly finance and operations. Certainly, HR professionals need to understand and enable the Data Generation and Machine Learning stages of the AI Life Cycle, and the new competencies needed to make that happen. In the following chapter, we explore in detail the role of Artificial intelligence in HR Practices.

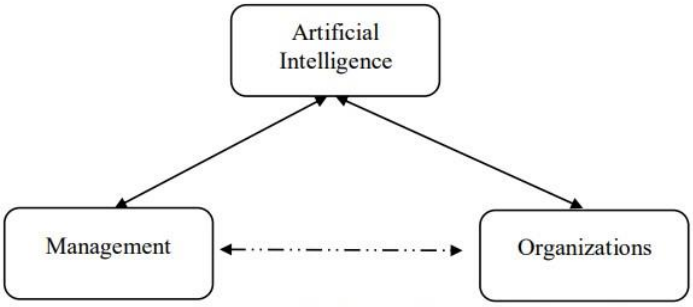
Keywords - Artificial Intelligence, Human Resources, Human Resource Practices

I. INTRODUCTION

Human beings are the energetic elements of every organization. The success of any organization, to a great extent, depends upon the quality and calibre of the people working in it. In other words, Human Resources (HR) is the most important asset of an organization. Thus, despite all technological developments, the importance of human resources has in no way diminished. C A Vikas Jain (2011)[1] identified that the success of any industry relies upon the quality of Human Resources it possesses. The growing recognition of Human and intellectual capital as core economic resources of the current era have forced the firm to shift its focus from investment only in traditional physical assets to the investment and development of Human Capital. Newly, Human Resources has progressed in a way driven by technology that employees continuously provide to enhance their strategic and tactical roles. One of these technologies is Artificial Intelligence.

Russel and Norvig[10] describe AI as an "intelligent agent" as machines can act intelligently as humans by mimicking human intelligence and this is made possible by feeding the machines with lots of data that are tested and trained through machine learning models. Human intelligence is enhanced by artificial intelligence, as it relieves employees from carrying out usual small tasks that can be automated, thereby qualifying them to develop their skills and knowledge more productively for undertaking tactical tasks. "Artificial Intelligence can be defined as a science that aims to replicate aspects of human intelligence such as learning, reasoning, perceiving, critical thinking, etc., using computer programs that are guided by logic" (Vilani, 2018)[12].

Organizations can enhance the value of their competitive superiority through the acquisition, expansion, and fusion of not only human resources but also organizational and physical resources, and this can be achieved when organizations accurately work on HR practices. AI technology can be incorporated with HR functions to develop advanced solutions to all problems concerning HR. Hence this chapter attempts to discuss the applications of AI in Human Resource Practices.



Source: - (Duchessi, O'Keefe, & O'Leary, 1993)

In the above figure, a framework shows the relationship between management and organization with artificial intelligence. The research author (Duchessi, O'Keefe, & O'Leary, 1993) in the research article discussed that artificial intelligence and digital technology has an impact on the ownership and responsibility for decision-making, cost reduction and enhanced service, personnel shifts and downsizing, has an impact on organizational structure and workforce management.

II. INTEGRATION OF AI IN HR PRACTICES

Human Resources is a differentiating element of an organization as it is an intangible resource that is difficult for competitors to imitate, thus giving a potential competitive advantage to any organization. In an organisation the role of humans is crucial and technologies have to depend on humans when subconscious decisions are essential to evaluate and facilitate the results of decisions. The development of Human Resource Information Systems (HRIS) has provided the foundation for AI applications in Human Resource Practices. "HRIS is a procedure for collecting, storing, maintaining, retrieving and validating data needed by an organization about its human resources, personnel activities and organization unit characteristics" (C. E. Cathcart). Nowadays HR departments heading towards the digital revolution and using various methods to simplify resources by using big data analysis, artificial intelligence, and cloud computing. (Amla & Malhotra, 2017) Most of the organization has been using artificial intelligence or digital technologies in HR.

AI has been implemented in Human Resource Practices in various organizations via the following techniques:

1. **Expert Systems:**

They are programs designed to configure expert knowledge into logical structures that solve unstructured problems and help develop complete information systems by providing easy access to knowledge. It is applied mainly in HR planning, compensation, recruitment, and labour management (Malik et al., 2022)[7].

2. **Fuzzy Logic:**

This technique is used in different research fields (Salmerón and Palos-Sánchez, 2019)[11]. In the case of HRM, it's based on set membership levels, whose values vary between 0 and 1. A value of 0 indicates no membership, while 1 shows full membership. With these sets, fuzzy logic can quantify data uncertainty and foresee future scenarios to facilitate decision-making (Kimseng et al., 2020)[5]. Its application began in 2000 and was used in personnel selection and optimal workforce design (Qamar et al.,2021)[8].

3. **Artificial Neural Networks:**

This application is a simplified model developed to mimic the function of the human brain. Its structure comprises a processing element, a layer, and a network to recreate the human learning process (Huang et al., 2006)[3]. It is one of the most popular techniques for prediction and is mainly used in selection, recruitment, and personnel performance management (Qamar et al., 2021)[8].

4. **Data Mining:**

It is the extraction of valuable but hidden information. Through its application, organizations can transform useful information and patterns into competitive advantages (Huang et al., 2006)[3]. Data mining was used in human resource management in 2006 and has been applied mainly for recruitment, competency and performance evaluation, and talent management.

5. **Genetic algorithm:**

These information search techniques based on replication, mutation, and gene crossover arrive at optimal solutions to mathematical problems. It is used mainly in workforce planning and personnel performance evaluation (Zhang et al., 2021)[13].

6. **Machine learning:**

It is the learning process by which a machine can learn by itself without being particularly programmed to do so (Rąb-Kettler and Lehnervp, 2019)[9]. Several papers agree that the use of machine learning in decision-making is quite beneficial for HR managers and turnover prediction (Hamilton and Davison, 2022)[2].

III. SEVEN WAYS OF AI USES IN HR PRACTICES

Artificial Intelligence is the advance of computer systems that can perform tasks typically requiring human intelligence. Its prime role in HR practices is to make HR professionals informed and efficient first and foremost, AI can add immediate value to HR also. Let's get into the deeper ways that artificial intelligence is making its mark on Human Resources Practices:

1. **HR Recruitment**

AI is helping companies to find out the right talent by comparing the resumes of applicants with the job descriptions. It will also use the resulting data to form a list of ideal candidates scraped from different resources, and even write an email to them about the current open positions. The evaluation process is also increasingly AI-driven, from video interview insights to personality assessments. In doing so, you are not only saving countless hours of work but also ensuring that no potential candidate is ignored due to any human error.

2. **HR Performance review**

AI-powered systems are tracking and analysing employee performance data throughout the year. This system considers factors like completed tasks, working time, project involvement and peer feedback. At the review time, HR professionals will get a comprehensive report highlighting each team member's strengths, areas for improvement, and progress over time. This makes it more objective and fairer for the team.

3. **Employee onboarding/offboarding processes**

New hires often feel overwhelmed with paperwork and procedures. Now imagine an AI-driven onboarding platform. When a new employee joins the company, they are guided by this platform. The platform then walks them through the necessary forms, introduces company policies, and even sets up initial training sessions. As a result, the employees feel less stressed and more welcomed. Similarly, when the employees leave the company, the AI tool can manage exit surveys, return of company property and other offboarding tasks, ensuring a smooth transition for both parties.

4. **Employee engagement initiatives**

HR professionals often struggle to measure employee sentiment truthfully. An AI tool can automate this process. The employer can program a short, engaging survey that implores honest and anonymous feedback from employees, the results of which are analysed by an AI tool. Tendencies and concerned areas are then identified as a result, providing HR professionals with the insights they need to improve employee satisfaction and engagement.

5. **Talent development and training**

AI tools can also personalize learning and development platforms for employees. Based on their role and goals, the AI commends specific training courses, webinars, or workshops. This personalized approach motivates the employees to actively engage in their career development. Beyond the development in their career, it adds to their personal development also.

6. **Workforce planning**

Through analysing data such as existing workforce skills, industry trends and company growth plans, an AI tool can forecast which roles they might need to fill in the next year. This allows HR professionals to strategize and plan the workforce which ensures the company always has the right talent. The same logic applies across the company to ensure that it has the right people with the right skills in the right places at the right time to fulfil its mandate.

7. HR chatbots and virtual assistants

Finally, consider an AI chatbot that aids as a 24/7 HR assistant. Employees can enquire to the chatbot about leave policies, benefits and more without approaching the HR professionals. This helps the HR team to focus on strategic and tactical tasks, while employees get immediate answers to their questions, boosting their overall experience.

IV. BENEFITS OF AI IN HR PRACTICES

As was already established, AI enhances human resources in many ways. Keeping up with the ever-changing corporate environment can be difficult. Because of this, Artificial Intelligence has become more and more important in human resources, giving specialists the resources, they need to provide scalable, immersive, and customised training solutions for their teams. Implementing AI in human resources can have a variety of positive effects on businesses, from speeding hiring procedures to lowering unconscious hiring prejudices, ultimately resulting in better production and efficiency.

V. CHALLENGES OF AI IN HR PRACTICES

Nowadays, necessary skillsets for employees are required due to the involvement of artificial intelligence in the human resource department. Most of the time it is difficult for employees to adopt and learn AI tools and have proficiency in the field of digital technologies (Jain S., 2017)[4]. The core part of any company is their human resource and implementing the AI system may have an impact on levels of management which will lead fearlessly in the mind of employees. Getting the right candidate to handle AI tools is one core challenge in front of the industry and it can be difficult for the HR department. One more limitation and challenge is restricting the HR department from taking decisions in day-to-day life as technology overcomes the authority and role of HR in decisions making in an organization.

VI. CONCLUSION

Artificial intelligence (AI) has expanded significant attention in recent years. Broadly defined as the effort to program computers to take on human-like cognitive processes, the new prominence of AI is closely tied to the success of machine learning, an approach to developing AI systems using real-world instances. The ML approach applies to a wide variety of use cases; therefore, there is an explosion of AI-based tools in every sector of the economy and of life. But if the users lack confidence or trust, the AI system is too opaque, or organizations are unclear about how this process should work, the use of AI-based HR tools will slide toward the extremes of either the algorithm or the solitary control of human beings. Both algorithmic and human decisions are imperfect, but with careful thought and purposeful practices organizations can work toward systems that instead build on the strengths of humans and machines to realize the full potential of AI in HR. Lately, The World Economic Forum created the Human-Centred Artificial Intelligence for Human Resources project in response to the growing use of artificial intelligence (AI) in human resources (HR). While improving and addressing crucial issues in HR in important ways, this technology has also raised well-justified concerns about its use. The project convened a multistakeholder community of experts to create a practical toolkit for the responsible use of AI in HR, which was tested with HR professionals in a variety of organizations around the world (Matissa Hollister, 2021).

Nowadays artificial intelligence has entered into the overall system of an organization and one of the areas is the human resource department where by using AI system human replaced human and all functions in the human resource department is carried out like candidate screening, recruitment, alignment of human resource activates and performance management etc. You do not need to be a genius to understand the basic nature of current AI systems. While the inner workings can be complex, almost all current AI systems are a type of machine learning, which shares a basic principle. Knowing a bit about this underpinning principle will help you to understand the strengths and limitations of AI- grounded tools. Certainly, HR professionals need to understand and facilitate the Data Generation and Machine Learning stages of the AI Life Cycle, and new competencies may be needed to make that happen. The use of data analytics should help the HR function integrate more nearly with other corridors of the business, particularly finance and operations.

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