The Application of Artificial Intelligence in HRM

Dr. Gandham Sri Rama Krishna, Associate Professor,
Dean, Academic Affairs
Sri Y.N. College, Narsapur,W.G.Dt., A.P.

Dr. Chinamilli Srinivas, Associate Professor,
Director, HRD Centre
Sri Y.N. College, Narsapur,W.G.Dt., A.P.

Dr.Tholada V.S. Prasad
Director
NEOCON CREATORS Pvt. LTD. Hyderabad,
Telangana State

Dr.N.G.S.Prasad
Professor & HOD.Dept. of Mgt. Studies
Swarnandhra Inst.of Engg. & Tech.
Seetharamapuram, A.P.

Abstract

Artificial Intelligence refers the technology that parades individualities allied with a human mind such as knowledge. Artificial Intelligence is a technology that qualifies machines to think, grasp, and accomplish tasks previously carried out by humans. It is a capacity to rationalize and take activities that have the best chance of accomplishing a precise goal. The influence of AI is expanding to a greater extent in human resource management. It starts from the recruitment process to exit process of an employee. Especially the Artificial Intelligence technologies that are focused on the reproduction of principles of human intelligence functioning. HR is the area which serves the entire organisation and need extra efforts have used these companies. HR professionals have started to realize the advantages of a data-driven decision. AI using workforce data will help HR professional to better understand their

workforce and to foresee problems and trends in advance. AI will also help HR executives to formulate and implement strategies effectively. The usage of AI will help HR to cut person-hours in tasks that can now be completed by the machine. AI has made their jobs run more smoothly and effectively. Considering how fast the area of AI in HR is growing, it must provide a significant advantage to companies.

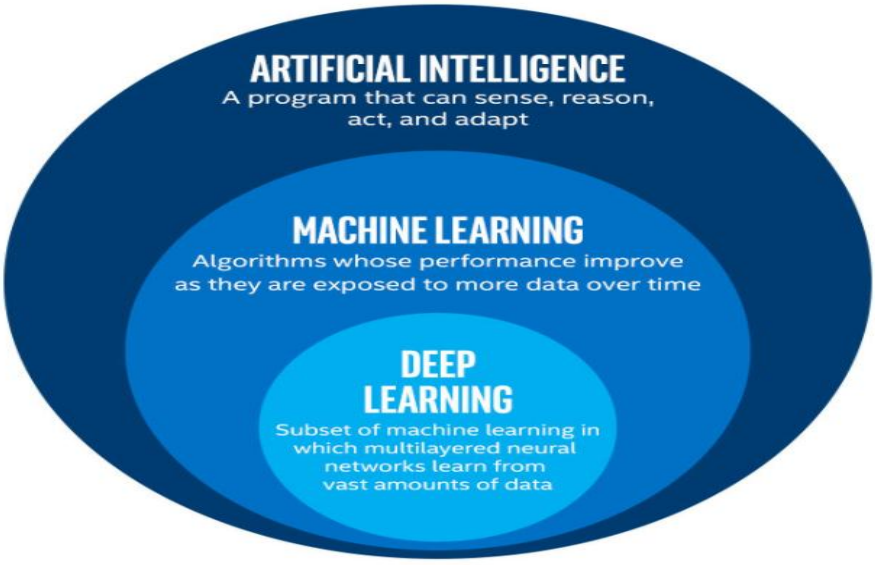
Keywords: *Artificial Intelligence, Human Resource Management Professionals, Machine Learning, Intelligent Behaviour, Human Intelligence, Algorithms,* Key Performance Indicator, *Collaborative Intelligence.*

Introduction

Now a day, every firm is faced with a challenging task to secure a competitive advantage in this VUCA era (volatility, uncertainty, complexity, ambiguity) and to formulate an appropriate strategy to support the survival and growth. Artificial intelligence will transform businesses and the work that people do. Artificial Intelligence is a technology that qualifies machines to think, grasp, and accomplish tasks previously carried out by humans. Artificial intelligence is the field of computer science that is associated with the concept of machines 'thinking like humans' to perform tasks such as learning, problem-solving, planning, reasoning and identifying patterns.

Artificial intelligence (AI) takes ground rapidly in HRM profession. AI refers the technology that parades individualities allied with a human mind such as knowledge and problem-unravelling. It can be said recreation of human intellect in technologies that are planned to reflect like humans and impersonator on their actions. It is the capacity to rationalize and take activities that have the best chance of accomplishing a precise goal. Artificial Intelligence is an emerging spectrum of technologies which helps computers to mimics the intellectual technologies, which is otherwise only possible with a human brain. Artificial Intelligence and Machine learning uses algorithms which provides solutions for complex problems and display intelligent behaviour comparable to any human intelligence.

Before starting to examine the impact of AI and robots to organization and person working inside, it will be necessary to review briefly an artificial intelligence, more exactly what it is.



Salin and Winston[1] (1992) defined AI as being a set of techniques that allow computers to accomplish tasks that would otherwise necessitate the reasoning skills that human intelligence brings. According to Nilsson[2] (2005) machines should be able to do most of the jobs that human intelligence demand, which he calls for human-level AI. It can take many different forms, such as robots, bots or software. Some would define the term of AI as the creation of robots, machines or programs which inhabits what could be seen as similar intelligent behaviour as human have (Tecuci[3], 2012).

Role of AI in HRM

The HR professionals today are focusing to optimize the combination of human and automated work to gain a simple, seamless and intuitive work environment. It provides them time for creativity, intelligence and empathy to deliver an enhanced candidate and employee experience. Although HR seems to be sheathing behind the implementation of AI related to other company business functions, such as service operations or marketing and sales, HR departments can substantially influence the control of AI. The influence of AI

is expanding to a greater extent in human resource management. It starts from the recruitment process to exit process of an employee that includes training, engagement, perks, records and so forth. Human resource - AI has strong probability to increase employee throughput and overall growth of the company. HR is the area which serves the entire organisation and need extra efforts have used these companies.

HR departments are always challenged with an overwhelming task that is extremely time and energy consuming, right from finding the right candidate to on-board, managing payroll, benefits to off-boarding an employee. Technology can accomplish many of those cumbersome tasks faster, cheaper and better than before. HR professionals have started to realize the advantages of a data-driven decision. Data-driven technology such an Artificial intelligence is all about analysing the huge pile of data to predicting trends and provide suggestions in a humanized format. AI using workforce data will help HR professional to better understand their workforce and to foresee problems and trends in advance. AI tools will solve all the cumbersome of manual analysis and time-consuming task in HR and thus enable workforce to work on a more productive task. AI will also help HR executives to formulate and implement strategies effectively. Further, using historical data and predictive analytics, AI can provide insight to HR on best practices, associated problems and impactful actions to grab the opportunity.

AI is used in HR for example in recruiting and selection processes, training current and new employees, evaluating their performance and in some cases, satisfaction towards their jobs and the organisation. The usage of AI will help HR to cut person-hours in tasks that can now be completed by the machine. The gained time can be used to complete other important tasks, for example, interacting with job applicants, organising proper interviews, and answering their questions personally. AI has made their jobs run more smoothly and

effectively. Considering how fast the area of AI in HR is growing, it must provide a significant advantage to companies (Zielinski[4], 2017).

Four Ways of AI in HRM:

AI technologies provide substantial prospects to advance functions in human resource. AI plays a significant role in HRM in 4 ways;

1) **Recruitment**

AI will streamline or automate, monotonous and high-volume task in recruiting process. Streaming resumes from a large applicant pool to find right candidate within a limited time is a challenging job every HR professionals. AI software will scan, evaluate and reject 75 per cent of resumes that are unqualified (Martin[5], 2017). Intelligent screening software powered by AI will screen resume, it will learn employee experience and skill, analyse their performance and turnover rates and shortlist the strongest candidate. Digital interview AI software the assess candidate speech, word choice and body language through video and audio and analyse the personality trait will fit the job. AI also helps to improve candidate experience through chat bots by providing consistent update of requirement, feedback and suggestions. Over the years key performance indicator (KPI) has become essential for quality hire. Artificial intelligence will help recruiters to find the perfect match based on KPI by using available HR data of employees performance, experience, knowledge and skills.

HR department usually manually conduct the evaluation of the received job applications, hence applicant ranking systems which can be created with the utilization of AI can make recruiters evaluation task more efficient. Candidate ranking system works at the power of AI algorithms and human recruiters providing training data for the AI algorithms, from where they learn the scoring function of applicants (Faliagka[6]. 2012). Upadhyay and Khandelwal[7] (2018) introduce chat-bots that are AI-driven recruitment assistants that enable personal and up-to-date connection possibilities with candidates via emails, text

messages or dialogue box. There are several computer-supported job matchmaking techniques which have been developed in order to ease the workload of recruiters. Such techniques include software that sorts resumes and can be implemented by exploiting learning-based techniques and algorithms (Montuschi[8], 2014). Job interviews conducted as a video interview have become a popular recruiting tool among companies. An application for video interviews that utilize AI has been developed.

2) HR Development

The most difficult task in HR development is to determine the effectiveness of training costs due to its branching and sophisticated feedback caused by improved production results of staff who took part in it. The aim of the HR development system is to make the knowledge; skills and experience of the staff correspond to the desired indices at different levels: enterprise strategy, branch activity, work duties. The specification of employees who need this train.

The abilities and capacities were required at work are continually evolving. Now have merchant programming that can shrewdly suggest videos or learning programs in light of any job, experience and companions. This software automatically read documentation and makes micro-learning programs and even frameworks that read and decipher a worker's written work or activities to suggest learning choices. AI software will provide more of individualized learning based on learning style e.g. turning written document into visuals. It could accumulate data about employee engagement or failures inside the program and consequently test new varieties to attempt and tackle the issue on its own. An AI program could all the more adequately measure employee engagement and wisely contrast their outcomes with a control population to find out whether the program resulted in some learning among employees.

4. Performance Management:

Evaluating performance has been put down to challenges caused by work environment biases and AI will eradicate biases with permanent feedback. The AI-driven assessment may occur continuously with checking objectives and a joint effort between the employees. The reward for good work will be given quicker or employers can provide challenges task if the group doesn't perform well. For instance, better works utilizes, AI for making a guide with the associations inside a workforce: shared purposes and targets. By obtaining data, such as, levels of employee engagement, work fulfilment, performance data, and understanding about the purposes behind worker turnover, AI may predict performance indicators of excelling employees, people who tend to leave a job position, HR department that can show great results.

5. Retention:

As much as it is hard to recruit talented workers, it is as hard to keep them in the group. According to Omer and Michael[9] (2015), 57 per cent of organizations consider employee retention their most serious issue. Be that as it may, AI can break-down and foresee the requirements of every individual employee. It can decide individual affinities and uncover who ought to get a raise or and who are disappointed with the work-life balance. This offers space to HR experts to be proactive and take care of the issue even before it really happens.

6. Employee Motivating:

All the above-mentioned ways AI improve HR practices and help to motivate the employees as well. When things run smoothly inside the organisation, the workers are more pleased with the company and satisfied with their jobs. AI naturally does not offer monetary motivators itself, but intangible benefits. AI helps to reduce HR managers' workload; it does the same for other business areas as well.

Frame of understanding for Change in HRM

Digital technology brings about new business model and strategy. For example, many leading firms in IT industry have already opted for the platform strategy and other firms are also desperate to find a platform where they can get so precious personal data of customers. They are not just contented to have the information but to secure their attention to understand their preferences and tastes they don't know themselves. Using this information, the firms do their best to customize their service or products and offer them on real time base. For doing so, they decide on data using AI algorithm.

HRM done on the real-time basis

Due to constant change in the environment, it becomes more important to take fast action than perfect decision. Training also takes that direction. IBM replaces traditional collective development by the individually customized training and development.

Real-time intervention and decision making can be applied to human resource management. It takes often real time feedback and evaluation in the firms. Many companies are replacing relative evaluation with absolute one, and reinforce real time feedback. Adobe, IBM, GE, Microsoft are some examples and they use IT applications for that purpose. Data analysis and real time decision can also be done for real-time recognition and spot bonus or promotion or change of role and responsibility.

IBM shows clearly that employee engagement explains two thirds of customer satisfaction. The case of Hitachi is more interesting. It succeeds in demonstrating that happy employee and organizational vitality lead to high performance. For this, Hitachi invented some wearable device that employees keep on their body and it collected all the data including bio-physiological ones they are not even conscious and analyzed them using AI.

HR strategy in the era of AI

As strategic human resource theory says, HR strategies have to follow business strategy (Baird[10], 1988; Patrick[11], 1998). Entrepreneur HR strategy fit with a firm aiming to get the market by a new business model formulated through intensive use of AI. It can be mainly found in small start-up. Key HR challenge for these firms is to foster an entrepreneurial culture and people, because they need people capable of speedy decision making, risk-taking and resilient to make a disruptive innovation in product and service.

On the other hand, the firms whose primary strategic focus is laid on the efficiency of the organizational activity and process have two choices for their HR. Expertise-based HR make use of the benefit from AI use and pursue operational excellence while reducing the workforce in proportion to the productivity gained. What they need as human resource is a small number of experts with good technical and digital competence. They need also engineers and data scientist to develop and introduce more efficient AI programs and solutions.

Collaborative Intelligence: Source of Competitiveness

Before explaining the reason why collaborative intelligence can be a source of survival and growth, we have to mention the limit of AI without human strategy. If every firms use AI, then the distinctive competitiveness

from the AI implementation can be disappeared. Another problem related to that strategy is a strong opposition from employees to the AI introduction and important side effects could explode like Luddite movement we had observed in the industrialization. In addition, AI cannot replace all tasks of a job at least in the near future.

Some Advantages of AI:

- Conversion of information into knowledge
- More powerful and more useful computers
- Relieves information overload
- Solving new problems
- Better handling of information
- New and improved interfaces

The Disadvantages of AI:

- Difficulty with software development – slow and expensive
- Increased cost
- Few practical products have reached the market as yet.
- Few experienced programmers

HR Challenges and the AI Life Cycle

There are several issues in HR that differentiate it from many other areas where AI techniques have been applied. The first is the complexity of HR outcomes. Consider, for example, what it means to be a "good employee." There are many dimensions to that construct and measuring it with precision for most

jobs is quite difficult: performance appraisal scores, the most widely used metric, have been roundly criticized for problems of validity and reliability as well as for bias and many employers are giving them up altogether. Any reasonably complex job is interdependent with other jobs and therefore, individual performance is hard to disentangle from group performance. A vast literature documents numerous problems with existing performance systems as well as field's failure to establish a clear link between individual, team and organizational performance. Given the uncertain quality of performance evaluations by humans. Doing so might well mean scaling up arbitrary or outright discriminatory human decisions.

The book "the Rise of the robots" written by Martin Ford depicting the near future where AI robots take human place (Martin Ford[13] 2015). The fear and anxiety are not just related to the massive job loss, but also result from the scary scenario that humankind is dominated and eventually become extinct by AI robots. Stephen Hawking, Elon Musk, Bill Gates are some of the well-known leaders who represent this view of dystopia. The idea that AI and robot dominate humankind one day was a main theme of scientific fiction movie, but has become more challenge now-a-days.

It is certain that AI and robots fundamentally change our society and our work. What AI is trying to do is not to play go but to do more efficiently what human do or what human even cannot imagine doing. Human resource management is not an exception. Understand the anxiety the firm needs to build up digital literacy in the employees. It consists of basic knowledge of statistics, programming language. It is a basic language for communication between human and AI to understand each other. Selection criteria for hiring must include this skill and knowledge. Or digital awareness program can be offered to stimulate digital literacy for the incumbents. Company can support individually customized learning program. Make a composition of team more

diverse including data scientist, functional expert and AI.

Management needs to stimulate insight and creative ideas from employees. In a sense, this is the most important human contribution. Human have to do what AI cannot do. Solution can be found by human and AI through collaborative intelligence or open collaboration with collaborators outside the organization.

Management should create open organizational culture and competence. It is important to create an open and constructive atmosphere in which everyone speak up one's ideas without hesitation, in particular for the organizations that have a collective and hierarchical culture. It would be a miracle for them to survive in the technological torrents.

Conclusion

The main benefits of AI were seen as the speeded quality and tasks, while the major challenge is seen as the company's overall readiness towards new technologies. AI can help the transition from traditional HRM to a more modern version where the usage of AI is included. Knowing the common mistakes and issues related to the subject will help companies to succeed and improve their business with modern technology. AI is used also in HRM and it has improved the recruitment process by cutting the person-hours needed and helps the recruiters making the hiring decisions. In corporate training the AI technology has made it possible for workers to rehearse in extreme situations and without the possibility to harm customer relationships. AI technology is also helping managers in evaluating their employees' performance by monitoring the employees in multiple different digital platforms at once. AI powered technology must be used correctly for it to function properly.

Reference:

1) Salin, E. D., & Winston, P. H. (1992). Machine Learning and Artificial

Intelligence. *Analytical chemistry*, 64(1).

2) Nilsson, N. J. (2005). Human-level artificial intelligence? be serious! *AI Magazine,* 26(4), 68-75.

3) Tecuci G.(2012), Artificial Intelligence. *Wires computational statistics,* 4(2), 168-180

4) Zielinski, D.,(2017), Get Intelligent on AI: Artificial intelligence can boost HR analytics but know what you're buying. HR Magazine. [e-journal] November 2017. Available through EBSCO Host http://web.b.ebscohost.com.ezproxy.metropolia.fi.

5) Martin (2014) Fun Facts About Resumes, Interviews & Social Recruitment Read more at https://www.business2community.com.

6) Faliagka, E., Ramantas, K., Tsakalidis, A., & Tzimas, G. (2012). Application of machine learning algorithms to an online recruitment system. In Proc. International Conference on Internet and Web Applications and Services.

7) Upadhyay A, K. & Khandelwal., K (2018). Ashwani Kumar Upadhyay; Komal Khandelwal, (2018)"Applying artificial intelligence: implications for recruitment", Strategic HR Review, 17(5), 255-258.

8) Montuschi, P., Gatteschi, V., Lamberti, F., Sanna, A., & Demartini, C. (2014). Job recruitment and job seeking processes: how technology can help IT. It professional, 16, 41-49

9) Omer and Michael (2015), Employee Engagement : Paving the way to Happy Customers. [ONLINE] Available at: http://deliberatepractice.com.au.

10) Baird, L. and Meshoulam, I. (1988), Managing two fits of strategic human resource management, Academy of Management Review, 13:116.

11) Patrick Wright, Scott A. Snell, Lee Dyer (1998), New Modes of Strategic HRM in a Global Context, The international Journal of HRM. Retrieved from www.researchgate.net.

12) Frey, C. B. and Osborne, M. A. (2013), "The Future of Employment: How Susceptible Are Jobs to Computerization?" Oxford Martin School.

13) Martin Ford (2015), Rise of the Machines: The Future has Lots of Robots, Few Jobs for Humans, retrieved from www.wired.com.