

Integration of Artificial Intelligence in Human Resource



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Abstract: *Technological innovations are unending and have impacted almost all, in every aspect of life over the past few decades. One such technological innovation which is capable of revolutionising the world, the most spoken, discussed and implemented in many fields is artificial intelligence. Artificial intelligence (AI) is software which can think intelligently, similar to how an intelligent human thinks. Based on few studies AI is organized into four categories such as, it's a system that thinks like a human (Haugeland, 1985; Bellman, 1978), think rationally (Charnaik and McDermott, 1985; Winston, 1992), act like a human (Kurzweil, 1990; Rich and Knight, 1991) and act rationally (Schalkoff, 1990; Luger and Stubblefield, 1993). As stated by Bersin (2018) AI is now popping in most of the software's, and it is integrated into many of the business functions. One such business function was the integration of AI is taking place at a faster pace is Human Resources (HR), concerning various HR functions such as hiring process, onboarding, training to mention a few. Integrating AI in HR does not mean that AI would completely take over the role of HR managers rather this will help the HR's to focus on more strategic work and less focus on repetitive and low-value add tasks. Hence without a doubt, there is a more nuanced picture of the way in which AI would help to streamline and reshape the HR functions for better efficiency and agility. This paper focuses on qualitative research and aims to explain how AI has been integrated into different functions of HR and its impact towards the organisations, employees and HRs.*

Keywords: *Artificial Intelligence, Human Resource Management, Employee Engagement, Talent Acquisition, Learning and Development*

I. INTRODUCTION

Artificial Intelligence (AI) the most debated and predicted technological advancement has taken control over various functions in the field of science, engineering, business and HR. Today's generations are fortunate because of the advancement that's taking place in AI. A mundane task once done manually is now performed by machines, software and various other automated systems (North, 2016). AI has been referred to as computational intelligence, simulation of human intelligence, a machine with minds and many more. According to McCarthy (1956), AI is defined as, "the science and engineering of making intelligent machines" (as cited in McCarthy, 1959). It is also referred to as efforts taken to make a computer think, with minds and also make them think sense (Haugeland, 1985).

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AI is incorporated in many products and services like automation in robotics that enables to perform a repetitive task which humans frequently perform. Similarly, machine learning helping a computer perform without any programming, computers that can capture and analyse visual information, process human language, design and manufacturing of robots and the most known on-going experiment which is self-driving cars with the help of image recognition, deep learning and computer vision (Rouse, 2017).

II. REVIEW OF RELATED LITERATURE

2.1 Artificial Intelligence

The concept AI was first coined by McCarthy (1956), it is referred to as a thinking machine which includes cybernetics, automation theory and information processing (as cited in McCarthy, 1959). Now AI is defined differently such as solving cognitive problems (Marr, 2018); a system which can perform a task like an intelligent being (Copeland, 2018) to mention a few. The development and innovation in AI have come a long way, and many organisations have incorporated it in their day to day business activities. Few of the business fields where it is used extensively are healthcare, manufacturing, retail, sports, HR, accounting and finance. According to a report by Narrative Science, it was found that around 61% of the businesses have already adopted AI in their operations which is higher compared to 38% in 2016 (as cited in Rayome, 2018), this explains that organisations are positively considering AI for their business operations. Based on previous articles and reports some of AI use case that has been implemented in different sectors are explained below;

2.2 Artificial Intelligence In Healthcare

Healthcare is one of the most important sectors is taking much effort to implement AI in few of the areas such as patient care: automated prescription, pregnancy management, personalised medications and care, medical imaging and diagnostic, drug discovery and other healthcare management (Alriza, 2018).

2.3 Artificial Intelligence In Finance

Finance which is a vital function in any business and industries like banks and insurance companies have implemented AI in billing, robot advisory, credit lending/scoring, expense reporting, (10+ AI Use cases in fintech).

2.4 Artificial Intelligence In Transportation

Transportation comprises of both cargo and public transportation which is used by the general public as well as by industries.



Applying AI in transportation is a critical task about reliability and safety. However many regions have tested automation in transportation with the help of AI such as autonomous buses, trucks and self-driving cars (Bharadwaj, 2018).

2.5 Artificial Intelligence In Retail

Retail, specifically online shopping gets a considerable amount of data relating to individual preferences, spending pattern and their preferred channels. Providing these data into AI helps companies to design customised shopping for mass audiences based on their preferences. AI in online shopping helps marketers' by delivering relevant advertisements, for customers it helps in creating ads as per their taste and finally from accounting side the billing, invoice generation and payments are taken care through automation.

From the reviews, it is understood that AI is across all the business fields and one such field is HR where AI is getting implemented at a faster pace. However there are no much research-based studies done on AI and HR, hence to fill this gap the current study through qualitative research aims at bringing out the HR areas in which AI has been implemented especially concerning the Indian context. The articles also bring in light about how AI in HR is impacting the organisation, employee and HRs.

III. RESEARCH QUESTIONS

The purpose of this study is to investigate the following research questions

- What are the HR functions in which AI has been implemented?
- How is AI in HR benefitting the organisations, employees and HR professionals?
- What extent as AI been implemented in corporates?

IV. RESEARCH METHODOLOGY

The study was primarily depended on secondary data as there was no primary research conducted. An extensive research was conducted to identify articles from various databases such as Google Scholar, ProQuest and grey literature. Finally from these sources around 20 unpublished and 6 published articles were collected. The study also adopted a interview method with a help of a structured questionnaires which was focused on HR professionals working in corporate. The study conducted a primary data collection from around 117 professionals to understand on AI implementation.

V. RESULT ANALYSIS AND FINDINGS

5.1 Application of AI in HRM

HR has been experiencing a major revolution with the help of AI which has been slowly trickled down to many of the HR functions. These functions are reshaped with the help of a virtual assistant which once was entirely carried out by humans. HR functions such as talent acquisition, performance appraisal, learning and development are few of the many where AI have been implemented.

5.1.1 Talent Acquisition

Talent acquisition is one of the monotonous functions in HR. Most of the recruiters and HRs spend their productive time in hiring process which includes attracting talents, screening the resumes, tracking and assessment, scheduling and conducting preliminary interviews, intimating the candidates about their status and onboarding. These monotonous works to a great extent have reduced with the help of AI. According to Wislow (2017), talent acquisition software has eliminated almost 75% of the work related to the recruitment process.

Recruitment which includes posting a job ad in relevant websites and searching candidates is a long process but with AI, sites such as LinkedIn, Glassdoor, Indeed, Naukri are using machine learning algorithms which provides job recommendations for the candidates based on their resumes, keywords used by candidates, their search history and list of connections.

Screening of candidates resume and conducting a preliminary interview which is a critical task and a long process especially when the volume of hiring is high. With the help of AI, software's companies can conduct video or audio interviews in executing this task with more efficiency and in less time (Hooda, 2018). Based on a study by Mondal (n.d) it was said that those companies using AI software's for recruiting and its related activities could reduce the cost per hire to 71% and increase the recruiter efficiency by three times (as cited by Min, 2017).

Engaging and re-engaging candidates is something most companies lack because it is a time-consuming function. Once a candidate applies for a position or after completion of the interview, companies generally do not get feedback or reply regarding their status. According Biswas (2018), it was stated that the present youngsters expect for a response from the company within ten minutes after applying for a job. Hence responding to them post applying for a vacancy or after the interview is a decisive factor otherwise one may lose them to its competitors who are highly responsive. AI integrated software's such as Chabot, Applicant Tracking System (ATS) and Customer Relationship Management (CRM) helps to address all queries of candidates on a real-time basis and also furnishes the updates about their current status.

Acceptance of offer letter and onboarding process is the last function of hiring process yet very critical for the organisation. These days' dropout rates of candidates are high post acceptance of offer letter. There exists a grey area, which is a period after the candidates put the resignation in the current company until he joins the new company. Hence in order to keep them engaged a follow up at regular intervals need to be sent to reduce the dropout rates which is done with the help of AI. Similarly, every company conducts an orientation program for all new joiners to brief them about the company culture, policies, rules and regulation. However, almost 90% of the employees forget or miss specific information during these orientations (Miller, 2016). Hence according to Zhou (n.d), intelligent bots assist HRs in creating new employee profiles also employees can interact with these chatbots which can be programmed so that employee can clarify regarding company policies, employee benefits and insurance (as cited by Min, 2017) on real time.

5.1.2 Learning and Development

AI is taking over Learning and Development (L&D) immensely. It is necessary to conduct L&D programs for all employees at regular intervals for improving their productivity and also for their personal growth. It is a continuous process which is given for new and existing employees relating to company policies and work. With the help of AI, L&D can be customised and give a more personalised experience for the users. Thus one can undertake to learn at their convenience. HR has to ensure smart and relevant content go into this learning material along with an efficient grading system thus making them focus on the training material and keep them more engaged (Power, 2018). With AI in L&D, HRs focus is only on designing quality L&D programs based on recent trends & changes, new skills etc which fits the preferences of each individual personally (Wislow, 2017) and making it available through an e-learning platform. Thus HRs needs not to spend their time in coordinating and conducting training programs for the employees physically which is often tedious and time taking. Though L&D is provided through online with less interference of humans, it is still essential to understand how the employees felt about each of the session which they have undergone. Thus getting feedback is vital which helps to provide better L&D programs in the future and also making employees feel valued and that their suggestions are considered.

5.1.3 Employee Engagement

Every other organisation aim is just not to keep their employees happy and satisfied but also keep them engaged. Employee engagement can be attained only when it is viewed holistically consisting of various aspects which begin from placing an employee till he decides to leave an organisation. Thus employee engagement consists of role clarity, learning opportunities, rewards and recognition, grievance redressal, employee health and wellness related programs. All this could be achieved fairly and equally with the help of AI in employee engagement. As discussed earlier, with AI customised learning and development, real-time queries about health and other employee benefits, virtual assistant on understanding company policies etc., can be achieved. This contributes to a great extent towards employee engagement. AI also helps in conducting ongoing feedback system which is unbiased and based on facts. With the help of AI tools, HR can develop and set measurable objectives for each employee. This makes the continuous feedback systems easier and can generate better results. Another most important aspect is the open feedback, suggestions, concerns which are shared by thousands of employees through an online survey can be managed more systematically with AI; AI helps in analysing these millions of data points and can predict not only the present engagement level but also future engagement, turnover rate, performance level and more.

5.2 Benefits of AI on HR professionals, employees and organisations

AI plays a significant role in transforming the various HR functions which have benefitted not only the HR professionals but employees and organisations too.

5.2.1 HR Professionals

There exists a lot of misconception in the industry that by introducing AI in HR, the HR jobs are at stake. Which in reality is entirely wrong, AI does not replace the job of HRs rather AI becomes a support function as the monotonous and administrative related work is taken over by AI and allows HR professionals to concentrate more at the strategic level. HRs are meant to dedicate more time with employees and business partners rather spending time on mundane tasks such as searching, sifting through profiles, sorting, answering to employee regular and daily queries, other administration and data related work. Because of these, the professionals are not unable to bring in their emotional intelligence to the role which is still a lacking to a great extent (Higginbottom, 2018). Hence it is high time to allow technology to take over the work which they are good at so that HRs can concentrate on doing what they are good at.

Thus with AI in HR the various benefits are, HRs can spend more quality time in planning and organizing HR activities, improved efficiency, reduced bias, reduction in administrative related work, prompt replies to employees queries and communicating to candidates regarding their status.

5.2.2 Employees

When an employee joins a company, first few days the employee will be loaded with training and orientation programs educating about the company culture, policies, procedures, work and employee documentation work. Thus employees tend to forget certain information which was shared to them during the orientation. With AI, through online platform and chat bots employees have the freedom to access any kind of information about policies, can clarify doubts related to work, holidays and leave related queries without depending on HRs. Training also happens for existing employees which is on-going process and companies have invested in planning these programs more systematic and flexible so that employees can take up at their convenience. They can also undertake remotely at their free time. Companies also extend customised training programs after understanding what an employee exactly needs that will improve their work productivity and efficiency. All this is possible only because of AI integration. Except for a handful of employees rest all are career oriented and they always look for companies which offer good career opportunities and career management. Companies with good career management are preferred over others which AI can perform. AI can effectively suggest employees about the internal career opportunities that exist based on their skills and experience. Thus employees are exposed more systematically about the opportunities without any bias.

5.2.3 Organizations

AI adoption in HR is helping the organisation as a whole. From a survey by Narrative Science (2018), it was found that organisations are adopting AI at a faster pace, around 38% of them have already adopted AI in their workplace, and by the end 2018 around 61% are expected to use it (as cited by Rayome, 2018).

The report also found that by integrating AI in HR, companies are also benefited; one such benefit there is a massive reduction in the cost per hire by around 71% with the help of AI in recruitment software which in turn increased recruiters' efficiency. The organisations can minimise bias by ensuring equal opportunity irrespective of age, sex and race.

Most of the companies find it very difficult to get the right talent at the right time due to which companies' productivity and profitability are affected. With AI and machine learning it is determined that tech companies and startups can get relevant profiles. Thus according to Almog (2017), AI and machine learning bots can reduce the time of hire by 50% and in-turn increasing the company's profitability and growth (Manager, 2018).

One other very vital benefit of AI, the organisation can determine and understand employees' performance over a period of time. According to Jauhari (2017), AI technologies come with face recognition technology which is capable of identifying the gender and also the psycho-emotional traits of each employee. Whether an employee is sad, happy, very happy or euphoric, with these data, an organisation can take the effort to make the bond stronger and take right measures to attend employees who are sad and understand the reasons for it. This will result in better employee engagement and higher commitment.

5.3 Implementation of AI in HR functions in Corporate

The study used an interview method where questions were asked to the HR professionals to understand on the extent to which AI has been adopted in the HR functions. From the findings it was determined that most of the companies have implemented AI extensively in recruiting and selection process as it is the most time-consuming function. They also have agreed that with implementation of AI, process like recruiting, initial screening, scheduling of interview and further process are all made online with the help of AI. With this the efficiency level of HR has increased to a very extent. The next function in which AI is seen is the onboarding process which is yet again a long process which involves a lot of paper work and time. With the help of AI these functions are automated and the functions are made more faster with the help of online platform. With respect to other functions most of the companies are at the testing stage.

VI. IMPLICATION OF THE STUDY

Despite many articles on AI and its integration in HR, there are very few research-based articles. Hence there is a dearth of academic research conducted to unravel the AI integration in HR and its benefits. This study based on qualitative research contributes to the theory building of AI and HR. The findings of the study demonstrated the different HR functions where AI has been integrated and how it has made the function more effective and systematic. The study also highlights the various benefits employees, HRs and organisations have due to AI integration. The findings illustrate the reasons why AI must be integrated into HR functions by all companies.

VII. CONCLUSIONS

Without a doubt, AI is taking over many HR functions, but it does not mean that AI is taking over the HR jobs and replacing HRs, which is not true. There is a lot of

administration related work for HRs which is significant and repetitive such as job posting, sourcing, screening, scheduling meetings and interview, preparing timesheets, recording and verifying accounts and other expenses. Of course, if this can be fully automated through AI, it will hugely benefit the HRs by relieving them from these routine tasks and ensuring they dedicate more time in strategic thinking, creativity, relationship building, emotional intelligence and better problem handling.

AI has a promising future in HR, however integrating it in HR has many challenges (Bersin, 2017) which a company has to overcome to get the full advantage of it. AI works like human only if quality data is collected and provided otherwise the results can be wrong, hence to get all people related data while integrating is a long process but it is only an initial challenge. Secondly, confidentiality of the documents and policies shared by companies need to be ensured that they are not misused and proper measures to be taken to keep it confidential and secure. Lastly, we cannot claim that AI will be able to perform the work with 100% efficiency but to a great extent can eliminate human errors and bias. Despite these challenges, many companies are making efforts to integrate AI in HR because the advantages overshadow the challenges with AI integration in HR.

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