

HR Transformation through Artificial Intelligence

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INTRODUCTION

As per the Deloitte's 5th Annual Global human Capital Trends, almost 53 per cent of companies were found to be redesigning their HR programmes. While some companies deployed digital tools, around 22 per cent were found to leverage AI (Artificial Intelligence) to deliver solutions in human resource management.

Employee engagement has become critical in increasing productivity and be competitive in the industry. In the earlier days HR practitioners used to rely on annual surveys to measure employee engagement. But these survey reports generally were not error free.

Today AI and Machine Learning (ML) are facilitating HR practices. AI segregates data in to a format that can easily interpret and ML scans data to find patterns and changes programme actions accordingly. Thus HR practitioners of today can be confident of obtaining results with minimum errors.

AI AND MACHINE LEARNING (ML)

Artificial Intelligence is the simulation of human intelligence processes by machines, especially computer systems. These processes include learning (the acquisition of information and rules for using the information), reasoning (using the rules to reach approximate or definite conclusions), and self-correction.

AI systems are categorized as either weak AI or strong AI. Weak AI is an AI system that is designed and trained for a particular task. Weak AI is also known as narrow AI, Virtual personal assistants, such as Apple's Siri, are a form of weak AI.

Strong AI is an AI system with generalized human cognitive abilities so that when presented with an unfamiliar task, it has enough intelligence to find a solution. Strong AI is also known as artificial general intelligence.

Machine Learning is a subset of Artificial Intelligence that constitutes various algorithms to assist the machine to learn a given task. The Machine Learning (ML) employs electronic machines (computers) to simulate human learning and allows the

machine to identify and acquire knowledge from the real- world, as well as improving its performance on certain tasks based on this new knowledge. More formally, we can define machine learning as “a computer program that learn from the experience (E) with regard to certain class of tasks (T) and performance (P). Its performance (P) improves with experience (E) gained while performing the task (T)”.

Learning is a process of knowledge acquisition. Human learn in a natural way from his experience by dint of their ability to reason out the experience being encountered. In contrast, the machine do not learn by reasoning rather it learns by the algorithm it happen to follow. In literature, however, a vast number of machine learning algorithms are available to perform various activities and tasks. The algorithms are classified based on the approach it uses for the learning process. There are four main classifications of ML algorithms, that is, i) Supervised learning algorithm, ii) Unsupervised learning algorithm, and iii) Reinforced learning algorithm.

Machine first learns from the examples supplied to it, then it begins performing its task according to the procedure it has learnt. Every learning process has a target value to approve its performance.

DEFINITION AND MEANING OF AI

Techopedia explains Artificial Intelligence (AI) as “a branch of computer science that aims to create intelligent machines.” Artificial intelligence (AI) is “an area of computer science that emphasizes the creation of intelligent machines that work and reacts like humans.”

Computers with artificial intelligence can perform activities like Learning, Planning, Speech recognition and Problem solving.

AI AND HR

ROLE OF AI IN HR: TO IMPROVE HUMAN RESOURCES

Artificial intelligence has the capacity to take your HR experience to the higher level. Just like Donald Southern, an HR specialist at Resumes Planet, who explain: “AI can help to handle recruiting, productivity, and retention more efficiently than traditional HR methods. At the same time, it also allows you to do it faster than ever before.” Let’s see here exactly how AI is doing that.

TALENT ACQUISITION

Using artificial intelligence, one can remove heap of stressful and monotonous work from his HR managers. Namely, talent acquisition software can scan, read, and evaluate applicants and quickly eliminate 75% of them from the recruiting process.

This is an important benefit as it permits the recruiter to spend more time analyzing and evaluating only a smaller group of eligible candidates. In such situations, HR units drastically increase the quality of hiring decisions. Additionally, companies save a lot of money this way because they don't have to pay the cost of poor hiring decisions.

ON-BOARDING

Hiring the most promising talents is not the only concern of HR departments, Adaptation is the second step in the process as many prospects can't fit in the new environment due to lack of on-boarding procedures. That is, the new employees demand a lot of attention and it is often impossible to dedicate enough time to each one of them.

That's where artificial intelligence steps in it ascertain customized on-boarding procedures for each single position. This has been proved to be extremely productive in practice since new workers who went through well-planned on-boarding programs had much higher retention rates than their peers who didn't have the same opportunity.

TRAINING

With so much of technological changes taking place almost every month, it is crucial for all employees to keep learning and improving their professional skills. This is artificial intelligence which can successfully plan, organize, and coordinate training programs for all staff members.

The most common solutions in that regard are online courses and digital classrooms. But this is not the only job of artificial intelligence since it also determines the best timeframe for new courses and schedules lessons so as to fit the preferences of all employees individually.

PERFORMANCE ANALYSIS

Engagement and productivity are two essential qualities of every successful professionals. However, most of the corporates struggle to find individuals who possess those traits. Thus, it is easier to monitor their behaviour and analyze key performance indicators.

Using artificial intelligence tools, HR managers are enabled to set concrete objectives and let all units work in smaller increments. This type of work is easier to follow and assess and it creates better overall outcomes. Of course, it doesn't only serve to improve productivity but also to detect team members who show lack of engagement continuously.

RETENTION

As much as it is difficult to hire talented employees, it is as difficult to retain them in your team. That is why almost 60% of organizations view employee retention one of their biggest problems. However, artificial intelligence has the ability to analyze and predict the requirements of staff members.

It can also determine individual affinities and reveal who should get a raise or who might be dissatisfied with the work-life balance. Such analysis provide room to HR professionals to be proactive and solve the problem even before it actually arise.

CONTRIBUTION OF MACHINE LEARNING (ML) IN HR

Why we are talking about contribution of machine learning in HR? That's because, the Machine Learning (ML) employs machines (that is, computers) to simulate human like learning process and permit the machine to classify and acquire knowledge from the real-world along with continuously improving its performance on certain tasks based on the newly acquired knowledge. The machine- based process is always error-free and economic too. (In AI, mostly the solution search process is acquired by biologically inspired methods like "particle swarm optimization" depends on its nature of flying and searching for food by flock of birds).

APPLICANT TRACKING & ASSESSMENT

Applicant tracking and assessment has topped the list in early machine learning applications, especially for companies and roles that receive high volumes of applicants.

ATTRACTING TALENT

Attracting talent before hiring has also seen an upswing in machine-learning based applications in the past few years. This is carried by recommending the suitable job to the aspirants. It is an online process.

ATTRITION DETECTION

Understanding people and why they decide to stay at or leave a job is arguably one of the most important questions for HR to answer. Identifying attrition risk calls for advanced pattern recognition in surveying an array of variables.

INDIVIDUAL SKILLS MANAGEMENT/PERFORMANCE DEVELOPMENT

Machine learning is showing its potential in boosting individual skill management and development. While there is definitely room for growth in this arena, platforms that can give calibrated guidance without human coaches save time and provide the opportunity for more people to grow in their careers and stay engaged. The software “Workday” is just one example of a company building personalized training recommendations for employees based on a company’s needs, market trends, and employee specifics. A research report was released by Tata Consultancy Services (TCS) in 2017 about the usage of cognitive technology in large companies in four regions of the world. The report explains how large companies have been using the technology since 2015 and about the initiatives expected to be taken in the future. The survey was conducted on 835 executives in companies from 13 global industries. The details of the report as is are given below (7):

8 KEY FINDINGS ON HOW BIG COMPANIES ARE USING AI, ACROSS AND WITHIN FOUR REGIONS OF THE WORLD

The findings of this research report include how big companies in North America, Europe, Asia-Pacific, and Latin America are spending on, using, benefiting from, and managing the adoption Challenges of AI.

Vide: “Getting Smarter by the Day: How AI is Elevating the Performance of Global Companies”, Tata Consultancy Services, 2017.

1. **More Than Four Out of Five Companies View AI to be Essential, and Nearly Half See it as a Transformative Technology:** The vast majority of companies (84%) are using AI, and 62% view the technology as being important or highly important to remaining competitive by 2020. In that year, companies project nearly half their AI investments (48%) will go toward transforming their business, not merely improving the status quo.
2. **Only a Few are Making Bold Investments Today, Which May Trigger a Competitive Imbalance Tomorrow:** Only a minority of companies planned to make substantial investments in AI in 2016. While the average spend in 2016 was expected to be \$67 million per survey respondent

company, the expected median is only \$3 million. Even some of the biggest companies surveyed planned on spending very little, relatively speaking. For example, 57% of companies with revenue of between \$20 billion and \$50 billion each spent less than \$20 million on AI in 2015. Conservative spending may come to haunt the majority; the companies with the greatest revenue and cost improvements in 2015 from their AI initiatives out spent those with the smallest improvements by a factor of five (in terms of spending as a percent of company revenue).

3. ***The Biggest AI Spenders are North American and European Companies:*** The average AI spend by North American companies was \$80 million in 2015, the highest of the four regions, followed by European firms (\$73 million). But in 2016, the average European company surveyed anticipated outspending the average North American firm at \$80 million to \$64 million. Nonetheless, 8.5% of North American firms planned to spend at least \$250 million in 2016 on AI initiatives vs. 6.5% of European companies.
4. ***By the End of the Decade, AI's Impact is Seen as Expanding Far Beyond the IT Function:*** The most frequent user of AI in 2016 was the IT department, but the biggest beneficiaries of the technology by the year 2020 are predicted to be outside of IT. In 2016, about 68% of companies implemented AI in their IT function—which was double the customer service, at 32% (the next most common user). However, by 2020, 70% of executives believe AI's greatest competitive impact will be on functions outside of IT. About a third (32%) believe the impact will be greatest in sales, marketing, or customer service, while 20% see it in non-customer-facing corporate functions of the corporate center, finance, strategic.
5. AI is helping employees do better work, and companies do work they couldn't do before. What they're doing with AI in 11 key business functions is a mixture of automating, helping employees, and doing work no one had done before in the organization—for example, automating routine answers to customer questions (replacing people) and automating assembly line activities; guiding service reps on how to resolve customer problems (helping employees); and anticipating future customer purchases and automatically presenting offers (enabling work the company didn't do before).
6. ***The Technology is Seen Producing Many New Jobs but Automating Jobs as Well:*** Though it differs with business function, executives forecast that AI will upshot in a net loss of jobs in each function by 2020 of between

4% (for example, in R&D) and 7% (for instance, in procurement). However, companies with the biggest revenue and cost improvements from AI in 2015 see the need for at least three times as many new jobs in each function by 2020 than companies with the smallest improvements from AI in 2015.

7. *Companies Rated Four Factors as Most Important to Generating Benefits From AI:*

- a) Making AI systems secure against hacking;
- b) Developing systems that continually learn on their own to make better decisions;
- c) Developing systems that make reliable and safe decisions; and d) getting employees and managers to trust what AI is advising them to do. The first two, of course, are huge technical challenges while the third is largely about codifying the right human knowledge for a particular AI system. The fourth factor is about convincing people that a computer can make better decisions than they can on a specific business problem.

8. *The Companies with the Biggest Revenue and Cost Improvements from AI in 2015 Shared Five Main Characteristics:*

- a) Outspent the companies with the smallest improvements from AI by a factor of five;
- b) Use AI more broadly across their organizations, and especially in areas that appear incidental to generating short-term revenue,
- c) Yet also focus on areas that directly impact their ability to make (and lose) money,
- d) Pay more attention to addressing fears of unemployment; and
- e) Ensure their IT departments didn't suffer the 'cobbler's children' syndrome of using AI everywhere else but in IT.

BENEFITS OF IMPLEMENTING AI IN HR

INDIVIDUALIZING CORPORATE TRAINING

AI and ML algorithm recommends training for multigenerational workforce based on their different learning styles

REMAINS UNBIASED

AI and ML algorithm conducts periodic and unbiased performance appraisals

HELPS IDENTIFY EMPLOYEE POTENTIAL

The robotic technologies of AI and ML has the capacity to recognize face and are capable of assessing the psycho-emotional traits which help HR practitioners in empowering employees by finding their true potential.

MAKES RECRUITMENT PROCESS EASIER

Applicant Tracking Software (ATS) has the capacity to assess countless resumes by identifying some keywords like qualification, experience or location. It facilitates in finding the right candidate from the volume of resumes.

SUPERIOR PREDICTION MODELS

AI and ML are able to forecast the return on investment, the level of employee engagement and the probability of completing the projects and predicting contingencies.

CHALLENGES OF AI APPLICATION

- Machines can act like humans only if they have required information about the world,
- Providing information to machines on reasoning, common sense and the problem-solving capacity is difficult,
- AI cannot handle the sensitive issues/ problems at work place like humans, and
- AI cannot exhibit empathy which is big hurdle in customer service applications like chat bots and lack of which may result in breaking relationship with valuable customers.

FUTURE APPLICATIONS OF AI IN HR

The effort is put in the direction of following future applications to HR that comprises the further advances in AI applications in HR such as the behavioural tracking, etc.

- Limiting the number of interviews required for an applicant (more than four didn't lead to higher quality) to make it more economic and efficient process,
- Revealing optimal organizational size and department size (to ensure optimal operational expenses as required),
- Better managing of leaves (Google saw a 50 percent decrease in defections). This ensures the minimal work output at every day basis,

- Creating on-boarding agenda for an employee's first four days of work, with increased productivity levels of up to 15 percent
- Post hiring monitoring
- Employees' behavioural tracking and making appropriate recommendations for the sake of performance improvement, etc.

CONCLUSION

As discussed in the above paragraphs, AI has its presence in recruitment and predictive analysis. AI is observed replacing routine tasks in recruitment with least interference by humans. AI is seen facilitating in recruitment process by conducting CV screening, sending automated messages and helping reference checks. Above all, Machines were observed to perform better than HR team by reducing the attrition rate and improving talent retention. AI is seen successfully carrying out simple activities of HR but how far it can take up complex issues of HR is yet to see.

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