Artificial Intelligence: The Need of Smart HR, Industry 4.0

Dr. Snehal K. Tare

Department of Management, Indrayani Mahavidyalaya, Talegaon Dabhade, Pune, Maharashtra, India

Abstract - **Smart HR concept is developing fast by integrating the data analytics tools in HRM. Organizations are more focusing on increasing technology coverage and its utilization as it is helping to create a strong human resources information platform. In the era of digitization, organizations are interested in growth and expansion of businesses. Smart HR refers to the offering world class human resource services by using advanced digital tools and techniques. Use of Technology, in every facet of life has changed the way we perceive things and live life. There have been many examples of disruptive technologies, which takes the place of the one existing and cause the older ones to become obsolete. One such example of disruptive technology is Artificial Intelligence, where computers or machines could be programmed in such a way that they could replicate the thinking, reasoning and decision-making ability of a human brain to provide a course of action or a solution. A variety of tasks like taking decisions, making predictions, which are repetitive in nature, could be delegated to the Artificial Intelligence of machines using Techniques like Machine Learning and Deep learning. Recognizing the need of the hour, a lot of research on areas where Artificial Intelligence, can further be used, needs to be encouraged. So, it can be concluded that there is a bit of AI in every body's life. Smart HR supports HR managers in performing all the HR functions as it involves creating, analyzing and storing large amount of data related to different services. It aids in analyzing the employees' problems using the data. The present research paper explores the existing literature on Artificial intelligence, Smart HR and Industry 4.0, and its need in changing business environment.**

Index Terms – **Artificial intelligence, Smart HR, Forth Industrial Revolution, Digitization.**

INTRODUCTION

Changing globalized world, highly interconnected processes and connecting people around the globe creating new challenges and opportunities in industry.

Industry 4.0 – the era of artificial intelligence and the Internet of Things (IoT). Digitization is advancing at such a rapid pace that businesses must be prepared for the many changes that technology poses. Organizations can become successful by adopting new technologies in human resource management.

Our world today is becoming volatile because of rapid changes, uncertain with unknown outcomes, complex with many interconnected parts, and ambiguous with a lack of clarity. We need to change our thinking level as per the new changing era of digitalization. Computers have already started replacing humans and now with the help of Artificial Intelligence (AI) industry are shifting towards human brains replacements.

As Peter Drucker, the father of modern management, once said: "The greatest danger in times of turbulence is not the turbulence. It is to act with yesterday's logic". HR people cannot depend upon the traditional pattern of it. Transformations from Traditional approach to Smart HR need to develop in industry. As industries are going for digitalization so do the HR also need to search for talent required to cope up with the changes into the industry. Start from Talent Acquisition, People management, Training and development, Talent retention till Exit and building network with people need to be completed with the digitalization.

INDUSTRIAL REVOLUTION 4.0

Industry 4.0 is the subset of the fourth industrial revolution that concerns industry. The fourth industrial revolution encompasses areas which are not normally classified as industry, such as smart cities for instance. Although the terms "industry 4.0" and "fourth industrial revolution" are often used interchangeably, "industry 4.0" refers to the concept of factories in which machines are augmented with wireless

connectivity and sensors, connected to a system that can visualize the entire production line and make decisions on its own. (Wikipedia)

EVOLUTION OF IR 4.0

The term "Industrial Revolution 4.0" originated in 2011 from a project in the German Government for high tech strategy. It promotes computerization of manufacturing industry. Industry 4.0 workgroup members and partners are recognized as the founding fathers and driving force behind Industry 4.0. On 8 April 2013 at the Hannover Fair, the final report of the Working Group Industry 4.0 was presented.

PRINCIPLES OF INDUSTRY 4.0

- Technical Assistance
- Information transparency
- Decentralized decisions
- Interconnection

Artificial Intelligence and Machine learning in HRM: Artificial intelligence is correct approach towards smart Human resource management system. It helps candidate as well as HR manager. Machines are logically redefining growing industries along with personal lives. Whenever we are vising unknown location, searching for the jobs etc., Artificial intelligence (AI) is providing solid solutions. AI technology has simplified the things and provides the right information at the right time. AI technology and machine learning are helping HR professionals in taking a forecasting. Following are the key points which states how of Artificial intelligence (AI) is useful for human resource management in industry 4.0.

1. Candidate screening: HR manager has to undergo through a wide range of candidate's profiles during recruitment process that consume a large amount of time in the filtration and analyzation whether candidate fit right for the job or not. Artificial intelligence has developed an entire screening software solution that is capable to perform all above-mentioned tasks with more successful results.

2. Recruitment and candidate engagement: Artificial intelligence (AI) plays an important role in finding and engaging the candidates. AI assistants will take care of candidate's screening, assessment, interview & engagement. These machines are important to manage candidates in different scenarios.

3. Candidate onboarding: Artificial intelligence (AI) again plays an important role in following up with the candidate and keep them engaged with the organization. AI shares the information and auto-reply to candidate's queries.

4. Candidate training: People always have a different learning style that couldn't be matched with each other. Artificial intelligence has personalized the candidate development and learning program according to the skill set, behavior, and experience along with learning capabilities. It can share customized information equally to all employees. It also supports the development of career opportunities.

5. Relation Management: Employee's policies could be related to leaves, insurance, salary slips and benefits. AI special Chatbots can respond to common queries. It also can schedule meetings for human resource and employees according to their availability. It also empowers the managers to make improve their decision making. AI analytics share employees' performances, track records and much more information.

DIGITAL ENTERPRISE

The Digital Enterprise solution portfolio enables industrial companies of all sizes to implement current and future technologies for the automation and digitalization. Thus, they can tap into the full potential of Industries 4.0 and get ready for the next level of their digital transformation journey. Siemens provide this type of services to the industry. "Digital Enterprise- Thinking Industry further" Driving the digital transformation by integrating automation, software and cutting-edge technologies. Digital enterprise portfolio enables smart usage of data. New IT technologies will help enterprises across all industries to master future challenges. Siemens is continuously integrating these technologies in its portfolio to offer the future of automation. Industry 4.0 creates opportunities for industries and national economies. To work with this changing environment we require productive, empowered and fully engaged workforce.

- Big-Data-Driven Quality Control: The application of big data in manufacturing will reduce the number of workers specializing in quality control, while increasing the demand for industrial data scientists.
- Robot-Assisted Production: Advancements will significantly reduce the amount of manual labor in production operations, such as assembly and packaging, but create a new job—robot coordinator.
- Self-Driving Logistics Vehicles: A food and beverage manufacturer has deployed automated transportation systems that navigate intelligently and independently within its factory, thereby reducing the need for logistics personnel.
- Production Line Simulation: Implementation of this technology will increase the demand for industrial engineers and simulation experts.
- Smart Supply Network: This application of technology will reduce the number of jobs in operations planning, while creating demand for supply chain coordinators to handle deliveries in smaller lot sizes.
- Predictive Maintenance: Monitoring and sensor technologies will allow manufacturers to repair equipment before breakdowns occur and will foster a significant increase in jobs associated with system design, IT, and data science. These advancements will also create a new job—digitally assisted field-service engineers—while reducing demand for traditional service technicians.
- Machines as a Service. In addition to fostering job growth in production and service, this business model requires manufacturers to expand their sales force.
- Self-Organizing Production. Although the use of this type of automation will reduce the demand for workers in production planning, it will increase the demand for specialists in data modeling and interpretation.
- Additive Manufacturing of Complex Parts. New jobs in 3-D computer-aided design and 3-D modeling are being created in R&D and engineering, while jobs are being lost in parts assembly.
- Augmented Work, Maintenance, and Service. The use of augmented reality is significantly

increasing process efficiency for service technicians, while requiring companies to build extensive new capabilities in R&D, IT, and digital assistance systems.

(Source: BCG Analysis)

Industry 4.0 will allow manufacturers to create new jobs to meet the higher demand. Growth of existing markets and introduction of new products and services. This favorable scenario contrasts with previous eras of technological advancement, during which the number of manufacturing jobs declined despite an increase in overall production volume. For example, automation and off shoring caused an 18 percent decrease in Germany's manufacturing workforce from 1997 through 2013, at the same time that production volume increased. (*BCG)

HR ANALYTICS

The HR Analytics start-ups are rising. The work of the HR Analytics platforms is increasing and most businesses are looking for alternative solutions. Innovative HR Analytics start-ups, which provides endless opportunities to businesses. These start-ups provide assistance to industries in various HR functions like recruitment, payroll and employee relations among others, thus, ensuring smooth operation of their core business function. Majority of the start-ups are integrating people analytics and machine learning techniques in their platforms. Professionals, experienced in the same have come up with these platforms in order to provide next generation products and services.

J. Miller-Merrell (2012) stated that HR functions can be observed and scaled by using metric values. Strategic HR decisions and initiatives can be taken by studying time of recruitment, attrition level, employee turnover, compensation and benefits and probability of organizational success. According to Oliver Pestel (2016), each type of HR analytics helps in addressing gaps in leadership by providing information. Employee competency status provided helps HR managers to design developmental programme to improve workforce performance.

According to James C. Sesil, (2014) applying advanced analytics to HR management decisions is need of hour. He insisted that the HR managers require skills of technology and management. HR analytics enables HR manager to create insights into data and

develop predictive models that enhance the organizational performance. In the past five years, there has been a 70 per cent increase in specialized analytics professionals in HR across the Asia-Pacific region, whereas India has shown a higher growth at 77 per cent, according "The Rise of Analytics in HR: An era of Talent Intelligence" report published by Linked-in. Some of the companies providing HR analytics are listed below. Harvard Business Review Analytic Services of HR and other executives (2014) reported that organizations are not utilizing predictive analytics on regular basis. In their survey, one-third of respondents were HR professionals.

CONCLUSION

HR Manager always concern about to build productive workforce. They continuously put effort implement innovative ways to increase operational efficiency and improve employee experience. According to a survey conducted by Deloitte, 56% of companies have redesigned their HR programs to leverage digital and mobile tools. AI technology helps in finding most suitable candidates that fit right for the job. In coming future, it is expected that entire recruitment process by following each and every step will be automatically handled by the software. This is quite easier method comparative to a manual approach. It also helps in collecting information regarding the behavioral aspect to understand if the candidate fits with organization's culture. Artificial Intelligence is capable to drive entire business towards a new direction with meaningful analytics. These analytics play an important role in keeping employees engaged. It directly impacts organizational efficiency and productivity. Digital technology evolution, HR has the opportunity to transform experiences into the daily activities, use innovative platforms, Tools, Software's to cope up with the changes. Organizations that use traditional methods to process business functions often experience relatively low employee engagement levels and slow progress in overall business performance. In the past few years, role of HR has evolved. It is concluded from this research study that; HR processes are critical in decision making and needs to introduce artificial intelligence and machine learning to manage its processes. Organizations need to implement AI to simplify tasks as the future of any organization depends upon smart workforce.

REFERENCE

[1] "Man, and Machine in Industry 4.0", BCG Analysis report

[2] "The Future of Digital HR Technology"- empxtrack.com

[3] "The impact of Industry 4.0 on HR professionals", October 19, 2018,

[4] "With the Fourth Industrial Revolution comes 'HR 4.0'" by Econ, Feb 24. 2017

[5] Harvard Business Review Analytic Services (HBR-AS) (2014), sponsored by Visier, HR joins the Analytics Revolution

[6] J. Miller-Merrell, (3 April 2012) "13 Best HR &Workforce Metrics Formula Examples," Blogging4Jobs

[7] James C. Sesil, (March 2014) "Applying Advanced Analytics to HR Management Decisions," Pearson Publication, New Jersey, pp. 13-25

[8] Markus Lorenz, Michael Rüßmann, Rainer Strack, Knud Lueth, and Moritz Bolle, September 28, 2015, "Man and Machine in Industry 4.0", by BCG.COM

[9] Olivier Pestel (2016) https://www.cornerstoneon demand.com.au/blog/define-4-types-hr-analytics -descriptive-diagnostic-predictive-prescriptive

[10] Siemens "Digital Enterprise" portfolio.

[11] https://solutiondots.com/blog/hrms-hr-payroll /artificial-intelligence-ai-smart-human-resource- management/