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RESEARCH ARTICLE

HUMAN RESOURCE MANAGEMENT

Future of Human Resource (HR) in Industry 5.0: Embracing Technology and Beyond - A Study

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Abstract

The study was made to systematically understand the transition that is taking place from Industry 4.0 to Industry 5.0 and to examine the factors that may impact the HR strategies and expectations from the HR fraternity in the future. The study has indicated that the role of HR in Industry 5.0 will be evolving significantly. Technology has already taken a step forward by introducing the concept of collaborative robots or 'cobots' in the work environment of Industry 5.0. This will establish a few additional focus areas for the HR professionals who will have to work towards creating a collaborative work environment for both humans and robots in the future, in addition to what is already being done in terms of automation of HR processes, digitalization, and HR analytics. With a more human-centric approach than Smart HR 4.0, newer ways need to be innovated to understand how robots work, develop the appropriate emotional intelligence among the human team members so that machines and humans can work in harmony, promote digital wellness of employees, and create a culture of organizational learning. All this can be done only if the HR of the organization remain agile and sensitive to the changes happening in their environment and upskill or re-skill themselves to meet expectations as stated. This study presents an insight with a new interpretation of several unanswered questions that demand a deeper investigation into understanding the current competency levels of the HR fraternity. It is important to assess their current readiness to meet the expectations and challenges of the future workspace in Industry 5.0.

Keywords: *Fifth Industrial Revolution, Smart HRM, Industry 5.0, Industry 4.0, HR 5.0*

1 Introduction

Technology advancement has taken giant strides since the first Industrial Revolution that occurred in Great Britain around 1760 until the current fourth Industrial Revolution initiated by the German Government in the year 2011. Continual improvement in inventions and innovations over the years has made technology more powerful. Historically, the first three Industrial Revolutions progressed almost 100 years apart from their prototypes. However, the fourth Industrial Revolution, also known as Industry 4.0, took only 40 years to develop. It was projected that it would take less than 40 years to reach the fifth Industrial Revolution(1). The reduced time span in the recent progressions can be attributed to the fast-paced transformative technology. Currently, we are in the middle of the fourth industrial revolution. During the ten-year mark of Industry 4.0, the European Commission announced Industry 5.0, or the fifth

Industrial Revolution, thus creating a co-existence between the two industrial revolutions. Considering the dynamism today, it can be predicted that the future is the fifth Industrial Revolution, and adapting to fast-paced changes is the only option for the survival and growth of businesses. Until now, all the Industrial Revolutions were technology-driven, however, Industry 5.0 or IR 5.0, or the fifth Industrial Revolution is labeled as value-driven(2).

The common factor that remains unchanged during this entire transition period from the first industrial revolution till the current one is the 'involvement of people'. The resourcefulness of 'People' did not get such importance during Industry 1.0 wherein machines, technology, and capital were the priorities. Now, it has been identified as a key factor in a successful organization specially with recent rise of the services sector.

2   Methodology

This paper is based on review of a few articles that provides insightful discussions and information on different phases of the Industrial Revolution, the history of Human Resources Management, Industry 4.0, Industry 5.0, Society 5.0, and the impact of different industrial revolutions and environments on the HR progression with a special focus on Industry 5.0.

The observations have been discussed by categories of the sub-topics by grouping the closely related studies or summarizing the section-wise relevant findings.

The secondary sources identified for this paper are books, journals, and websites related to the subjects. Due to the dynamic nature of the topic, only some of the recent and relevant articles, and research papers since 2015 having relevant abstracts and keywords have been referred to with the goal to maintain the applicability of the available information to recent times. This study is a systematic review of the extant literature and case studies on the changes happening in HR practices globally due to the different industrial revolutions while focusing on the futuristic expectations from the HR fraternity in the fifth Industrial Revolution.

The purpose of the paper is to establish the theoretical framework of the research, by linking and aligning the different concepts within the broader research topic and identifying the research questions. The primary outcomes of the paper are summarized to derive the research gap leading to the research topic.

3   A Contextual Analysis

3.1   Origin of HRM

The National Cash Register Company was the first organization to create a 'Personnel Management Department' in the early 1900s. This department was established to handle employee grievances, discharges, safety issues, and training, as an outcome of the frequent employee strikes and walk-outs arising due to unfair labor practices, safety concerns in the workplace, and the progressive movement against the darker side of industrialization and unchecked capitalism(3).

In the year 1966, E. Wight Bakke, Management Theorist, and professor, defined the concept of HRM for the first time as-

"The general type of activity in any function of management is to use resources effectively for an organizational objective. The function which is related to the understanding, maintenance, development, effective employment, and integration of the potential in the resource of people I shall call simply the human resources function." (4)

3.2   The Changing Facets of HRM With the Industrial Revolution

Learning and adapting to the environment for harnessing the potential of each Industrial Revolution and workforce generation has been the goal of HRM.

Many researchers have contributed to understanding the evolution of HRM since its inception after the Gilded Age (1877 to 1896). During the Gilded Age, employers and employees were at war with each other which hindered business growth. Hence, the need to address the gaps between

them was felt. Many organizations followed the example of The National Cash Register Company and established their own 'Personnel Departments'. The Second Industrial Revolution also saw the beginning of World War I which created a huge demand for workers in the manufacturing industries, thus emphasizing the recruitment processes. This continued till the end of World War II in 1945. Post World War II (1945-1960), programs and policies initiating non-monetary recognitions for employees were highlighted that emphasized on the social and psychological factors in the workplace, beyond monetary incentives. The Social Issues Era (1963-1980) witnessed newer legislation in the employment world along with an economic boom. This was the period when the focus shifted from simple clerical activities of the Personnel function to developing human resources and complying with various legislations and obligations. For the first time, the concept of 'Human Resource Management' emerged during Industry 3.0. The IR 3.0 also witnessed the cost-effectiveness era (1980 to early 1990s) and the technological advancement era (later 1990s) that signified the importance of 'Strategic HRM'.

In the year 1992, P.M. Wright and G.C. Mc.Mahan defined Strategic Human Resource Management as "the pattern of planned human resource deployments and activities intended to enable the firm to achieve its goals" (5). This means that HR is a partner in the Company's overall strategies toward achieving its goals. Hence, besides implementing effective internal processes to manage people, an important role of HRM is also to identify external threats and opportunities through environmental scanning"(6).

3.3   Industry 4.0 and HRM: Impact and Challenges

The re-engineering technologies commonly used by businesses in the I4.0 environment are the Internet of Things (IoT), artificial intelligence, robotics, Big Data analysis, 3D printers, augmented and virtual reality, cloud computing, etc. Hence, HR being a strategic partner to the business goals, need to align its strategies, approaches, and tools to address the changing requirements in the fast-paced technological environment. Smart HR 4.0. is the integration of technologies powered by new-generation employees in the traditional HR processes that offer various benefits to the organization(7). Sivathanu and Pillai in their study 'Smart HR 4.0 – how industry 4.0 is disrupting HR' highlighted the importance of Smart HR 4.0. The Authors found that an organization will have to adopt emerging technologies of Industry 4.0 like Internet-of-Things, Big Data, and artificial intelligence to automate most of the HR processes to gather a competitive advantage in the I4.0 environment. This also requires a change in the organization's structure and leadership styles(8). Several studies suggest the importance of implementing Smart HR practices in the current Industry 4.0 environment. However, the HR fraternity encountered multiple challenges while implementing these Smart HR strategies in their respective organizations. Re-skilling the current workforce and making them aware of the expected changes in the work environment, adapting new technology in the system and processes, data and information security, huge investments, legal aspects, and limited infrastructure are few of the identified operational chal-

lenges combined with educating the leadership team about the new framework of business strategy in IR 4.0 (9).

On the softer side, resistance to change has been the biggest obstacle within the company that slows down or breaks the transformation process. Again, with automatization and robotization of processes, the new working environment will involve human-human, human-robot, and robot-human interactions. Thus, people will have to learn not only how to work in this new era, but also communicate effectively and feel safe and motivated(10).

3.4   From Industry 4.0 to 5.0

'Industry 4.0 may not be considered a human centric approach. That's as may be, the like of human machine co-operation or operator assistant technologies, socio-technical approach, and work life balance is not to be ignored' (2). On the other hand, the scope of Industry 5.0 goes beyond technology. It aims for a sustainable industry via green and digital technology. Industry 5.0 is the more human-centric version of Industry 4.0 built on the foundation of collaboration between humans, robots, and algorithms. The key visions of Industry 5.0 are 'human-robot co-working, 'building a sustainable economy' and developing resilience. Moreover, Industry 5.0 is trying to overcome two important limitations of IR 4.0:

1. disregard of the human factor in different automated processes and

2. advanced technologies being used mostly by the manufacturing sector(11).

4   Future of HRM in Industry 5.0

Managing the diverse workforce in today's dynamic era involves employing technology in HR to a large extent. A few of the latest significant trends in HR are prioritizing DEI (Diversity, Equity, and Inclusion), encouraging a data-driven culture, using scalable cloud-based HR platforms, implementing Virtual Reality (VR), especially in talent acquisition and training, and implementing AI-powered HR analytics(12). In addition to the automation of processes and data analytics in HR introduced by Industry 4.0, IR 5.0 has presented a unique situation that will significantly determine the future of Smart HR 4.0. Integrating 'Cobots' or 'Collaborative Robots' into the organizations as co-workers of human beings so that the routine mundane work can be performed by the Cobots and their human contemporaries can focus more on the creative and strategic parts.

Recently, many researchers have disregarded the belief that machines will replace human beings as was feared during IR 4.0. Rather both will work together towards the common goal of achieving organizational efficiency. Therefore, the future of HRM function is building a collaborative environment for both machines and human beings to work in harmony. Moreover, it is not only about managing a team of Cobots, but also the emergence of 'Cobot HR' that will assist in promoting the paradigm shift from digitization to personalization, an essence of human touch that Industry 5.0 intends to re-introduce that was lost during the IR 4.0 automation journey that resulted in the debate between man vs machine(13).

It is also predicted that while building a collaborative environment for machines and human beings, the HR fraternity will encounter many challenges like (1).

1. Absence of appropriate legal and regulatory norms defining the do's and don'ts for introducing cobots in the system

2. Emergence of newer psychological issues among the human workforce due to excessive use of technology at the workplace

3. Social issues arising from reduced human-human social interaction.

4. Emerging ethical issues due to a shift in ethical considerations and perceptions of technology.

5. Few other concerns arise as a natural outcome of human behaviour when introduced to newer systems: biases, prejudices and personal preferences towards the Robots, possible negative attitudes towards them, competing with the Robot's efficiency, and not knowing how to work with their robot colleagues.

With the above-mentioned circumstances and challenges, the HR department will have many added responsibilities in the future. They will have to-

1. Understand the working mechanism of Cobots in order to manage their productivity and efficiency. Eventually, the HR department may also be named differently as described by (1).

2. Enhance the emotional intelligence of the workforce as it is found that emotional intelligence helps employees to perform better in terms of their decision-making capabilities and art of communication. It is found the emotional control and emotional management have a significant relationship with the organization's performance in Industry 5.0 (14).

3. Promote the digital wellness of employees using technology that can help treat mental health issues in the workplace(15).

4. Develop a culture within the organization that embraces diversity, enhances creativity, and promotes organizational learning toward a human-tech-enhanced future(16).

5. Remain agile and assess their own level of competencies aligning with the industry 5.0 needs in terms of Professional Behavior and Leadership, HR Service Delivery and execution, and Business intelligence to identify gaps towards upskilling and re-skilling, thus adding value to the system(17).

5   Conclusion

With Industry 5.0 introducing new concepts, circumstances, and challenges, not only the role of HR will see a substantial change in the next couple of years, but the significance of the IT department will also increase eventually. There might arise the need to establish a separate 'Robotics' department to manage the 'Cobots or collaborative Robots'

in the workspace. The focus will be more on human-centric approaches rather than automation to align the HR goals with Industry 5.0 philosophy. This will be the major difference that the entire HR fraternity will experience from the current Smart HR 4.0 practices. To keep themselves ready for Industry 5.0, this is the right time that HR professionals should assess their competency levels to derive a plan to re-skill or upskill themselves. Competency assessment and re-skilling or upskilling of the HR fraternity with regard to the newer requirements in the IR 5.0 workspace is an area that requires further investigation and research.

Conflict of Interest

The authors declare no conflict of interest in this reported communication. They confirm that the manuscript has not been submitted elsewhere for publication.

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