Human Resource Management in the Age of Artificial Intelligence: The Dilemma of Modern Organizations

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Abstract

Emerging trends in the field of Human Resource Management have continued to demand the attention of scholars, policy makers and practitioners in the relevant disciplines, considering the dynamic nature of work environment, particularly in recent times. The anticipated roles of Human Resource Managers have been foisted by technological strides and innovations, with emphasis on Artificial Intelligence. The outcomes of contemporary research and sophisticated technological innovations have continued to pose growing threats to age-long organizational cultures and the ties of interpersonal working relationships. The objective of this paper, therefore, is to determine the Impact of adopting Artificial Intelligence in modern organizations, as well as its implication to the traditional Human Resource Management operations. This study is aimed at exploring the place of Human Resource Management and managers in our technologically evolving workplace and the world in general. Data for this study were obtained from both primary and secondary sources. This paper anchors on the 'Resource-Based Theory' as a framework for analysis. Findings revealed that technological innovations are gradually replacing manpower in modern organizations, resulting in a decline in managerial roles and duties. The study concluded that despite the laudable contributions of technological advancements within the organizational settings, its effect and the attendant implications to the working population is quite enormous. It recommends that Human Resource Managers must understand and strive to develop robust skills necessary for collaborative teamwork with the intelligent machines, and to fill the gaps which Artificial Intelligence cannot fill.
Keywords: Robotics, Automation, Artificial Intelligence, Human Resource Management, Modern Organisations

Introduction

The emergence and evolution of technology in the field of Human Resource Management (HRM) can be traced as far back as the era of industrial revolution in which technological advancements and innovations replaced skilled labour. In recent times, however, particularly at the turn of the 21st century, the presence of 'robots' as intelligent beings and the introduction of 'Artificial Intelligence'

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in some organizations have continued to alter the hitherto existing Human Resource (HR) functions, thus, providing seemingly unique growing strengths and potentials for Human Resource Management, as well as obvious challenges, including job-specific obsolescence (Malik et al, 2019; Lariviere et al, 2017).

The ever-changing and dynamic role of Human Resource managers in the face of widespread technological innovation forms the focus of this paper. The world is changing no doubt, and in the quest for efficiency, managers now fear for their future as the traditional roles such as was put forward by Gullick and Urwick (Planning, Organizing, Staffing, Directing, Coordinating, Reporting, and Budgeting) keep diminishing as the human factor in modern organizations keep eroding with technological innovations like Artificial Intelligence. According to Cox (2021), tasks that were originally performed by a large number of people on the organizational shop floor are now handled by few machines which will become even more rampant in the near future. As a matter of fact, it is envisioned that Organization of the future is one which is run by machine intelligence.

The introduction of modern technological innovations such as Artificial Intelligence now forms part of strategic planning approach of the world of business in recent times. A number of identifiable advantages are associated with this growing trend. These include, but not limited to: reduced work-related stress, increased productivity, improved service delivery, as well as efficient use of materials in organizations. In some cases, the emergence of new technologies results in the disruption of almost every process in the organization. It has been ascertained by Gartner Research that: "Intelligent software and Artificial Intelligence powered robots will join humans at work by the year 2028. Hence, managers must anticipate new trends in business, society, technology and information".

A large number of Organizations today notably those in technology have taken the adoption of Artificial Intelligence, to a differently level entirely. Similarly, the existence of robot-powered operations and automated systems are now quite common in virtually every business venture. In this quick evolution of organizations, only those that quickly and rapidly adapt will survive. The rising rate of this organizational change which has been attributed to the fourth industrial revolution, visualizes massive advancement in industries, technology and societies. This work which views Robotics and Automation as components of Artificial Intelligence is aimed at investigating the future of Human Resource Management in the ever-changing world of Artificial Intelligence laden organizations and the part to play for relevance.

Conceptual Review

Robots and Robotics

Robot is a programmable machine that can complete a task within a given period of time. Robots can also be defined as "embodied, automatically controlled reprogrammable multipurpose entities that perform useful tasks for humans or equipment", pose to jobs. According to the International Federation of Robotics (2017), much has been written about robots. Robots are perceived to have some levels of agency but completely lack emotionality (Gray et al, 2007).

Robotics on the other hand, can be defined as the intersection of science, engineering and technology that produces machines called Robots that replicate or substitute for human actions.

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Automation

The scope of Automation in the field of Human Resource Management is quite elastic. It goes beyond the introduction of more sophisticated technological innovations to include the need for enhancement of employees' skills, which invariably impacts on the organizational culture. According to Aron Heller and Abhay Savargaonkar, Automation is the technology that allows machines to complete missions with little or no human inputs. Noumani and Syed (2020) maintained that Human Resource Automation is a panacea which is increasingly helping to eliminate inefficiencies and barriers to human resource operations by facilitating enterprise-wide integration and enhanced overall performance, speed and efficiency – thereby adding value to respective organizations.

Artificial Intelligence (AI)

Artificial Intelligence is a computer science and engineering field pursuit which gives machines the ability to act as humans in perception, synthesizing, inferring and interpreting information. Benbya, Davenport and Pachid (2020) defined Artificial Intelligence as the "ability of machines to perform humanlike cognitive tasks, which include automation of physical processes such as manipulating and moving objects, sensing, perceiving, problem solving, decision making and innovation". According to Budwar, Malik, DeSilva and Praveena (2022), Artificial Intelligence has been integrated in Human Resource Management by Organizations to manage people and guide the way businesses are conducted in general. In adopting Artificial Intelligence, machines now have the ability to make informed decisions based on available historical data and behavioural patterns.

Human Resource Management
There is a wide-range of resources at the disposal of any given organization. These include: time, machines and equipment, structures and finances, but human elements have been identified as the greatest resource available to any given organization (Nwafor, Ojiako, Okonkwo and Onyeulo, 2023). Manpower or workforce constitutes an essential and indispensable component of any given work environment. As such, the need to identify and harness the unique potentials embedded in an organization's workforce, cannot be overemphasized. Nwosu, (2017), observed that human resources ordinarily supersede other resources in organizations. It is usually referred to as the most important resource in organizations as it is solely capable of directing and utilizing other resources for productive purposes. Chan (2005) opined that the future of any organization lies in the ability to manage the diverse body of talents that can bring innovative ideas, perspectives and views to their work.

Human Resource Manager
Human Resource Managers are the practitioners of Human Resource Management (HRM) who oversee the human factor in organizations, who also play the crucial role as connection between management and employees. Foote and Izabel (2022) conceptualized the Human Resource Manager as "one who treads a fine line in seeking to reconcile the values of the organization with professional values and the ethical management of people". We can therefore conclude that the Human Resource manager is the peoples' manager in an organization.

Emergence of Artificial Intelligence in Modern Organizations

It is an established fact that our lives have been affected in numerous ways by computers which we cannot also disregard in discussions relating to Artificial Intelligence, which are sometimes called machine intelligence or machine learning, the origin of which can be traced to ancient Greek

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engineers and much recently Charles Babbage's calculator of the 1800s called the 'Difference Engine' and his much complex version which he named the 'Analytical Engine'.

Quoting Martin Campbell in the origin of computer: *"Computing has existed long before the transistor. Ancient astronomers developed ways to predict the motion of the heavenly bodies. Taxes were summed, and distances mapped. Computer technology has matured to the point where it is omnipresent and seemingly limitless. Researchers are attempting to use fresh insights from the mind, biological systems and quantum physics to build wholly new types of machines".*
(Scientific America, the Origin of Computing, September, 2009.

The above quote justifies the emergence of Artificial Intelligence, as researchers, engineers and Organizations engage in the pursuit of effectiveness and efficiency, using computing power and systems. The Organization of the past was one dominated by human effort which totally relied on man and his attributes to survive and flourish with the Human Resource Manager playing a key role to this effect. In today's world, there is a sudden drive towards the adoption of technology in Organizations with the now greater understanding of the benefits of Artificial Intelligence which have smoothened operations and kept customers and clients well serviced with other perks like, increased productivity, higher rates of production, better quality service and the efficient use of materials, on the negative side, it is also leading to some jobs becoming obsolete (Mercer, 2022).

Levels of Artificial Intelligence (AI) Acceptance in Organizations
The introduction of Artificial Intelligence appears to be a step in the right direction, for most organized establishments, particularly in the recent times. Burgar observed that from its humble beginning, Artificial Intelligence has been elevated to a great height of relevance in modern organizations with popularity still growing. Subjects which were once fiction now found solid foothold in almost all facets of our lives and organizations today, whether we realize it or not. It is in our everyday life, spanning across organizations in high-tech, telecommunications, financial services, health care and pharmaceuticals.

Uzailko (2023) maintained that Artificial Intelligence, has continued to prove itself as a worthy tool in the organizations and spans customer service, relationship management, personal assistance, cyber security etcetera. In addition to the above assertion, the essential roles of Human Resource Managers like recruitment, employee development and training, performance management and appraisal, employee relations and engagements, planning and schedule, documenting, recording and reporting have all been critically affected in varying dimensions by these innovations and in the near future, an even greater fusion is expected in organizations. Having examined trends and the unending immense benefits of Artificial Intelligence, in the past and present-day organizations, it is pertinent that we explore the future as it relates to Human Resource Management.

According to Coy (2021), it has been predicted that the organization of the future work environment is still quite uncertain. Whereas some scholars believe that Artificial Intelligence and robots will dominate the workforce, totally eliminating human jobs, another set are of the opinion that Artificial Intelligence will not totally eliminate the human workforce rather it will reinvent new jobs and replace a number of mid-level management jobs, teams and low-level employees. It is however expected that Artificial Intelligence powered technologies will join humans at work (Gartner, 2018).

Artificial Intelligence in Human Resource Management
The interface between Artificial Intelligence and Human Resource Management practices now forms a major determinant of how organizations recruit, manage and engage their workforce. Similar to the shop floor, Artificial Intelligence, has also pushed senior and midlevel management for efficiency

and effectiveness in organizational goal attainment. To buttress this point, Mittal, Dave, and Samir believe that Artificial Intelligence in Organizations is currently enhancing products, optimizing internal and external operations, pushing employees to greater creativity and helping top management to make better decisions. They support the discussion that Organizations now develop products based on their core strengths and industry with keen involvement from customers and clients. Operations like follow-up and reminders are now conveniently handled by Automation and Artificial Intelligence tools giving room for management to make better decisions from the planning stage to that of implementation, all towards better organization and efficient service delivery.

Contributions of Artificial Intelligence in Modern Organizations

A number of benefits are associated with the introduction of Artificial Intelligence in the affairs of Human Resource Management in modern organizations. According to Ruel et al (2004), Human Resource Automation streamlines the administrative process, reduces the errors and deletes the repetitions, thereby increasing the task efficiency. In addition, experience has shown that Information Technology revolution, as well as the changes in social environment during the past decades, have resulted in the emergence of a global competitive market. Deillon (2014) observed that the introduction of technology is saving cost and time of an applicant and recruiter, thus, the cost of technology job posting is normally lower than printed media, headhunter and employment agencies, and more effective than those of the other traditional recruitments processes.

Noumani and Syed (2020) noted that Human Resource Automation will continue to play a viable role in overcoming the Human Resource challenges of the 21st century. They added that technological upgrading has created a new generation of employees and has changed the fabrication of the organizational structure. Hence, managing workforce spread across various geopolitical locations, cultures and political systems has thrown-up a daunting challenge for the present-day organizations. A number of organizations are currently utilizing Artificial Intelligence and Automation in various Human Resource practices such as internal sourcing, screening processes, hiring of employees, promotion exercises and pay systems. These technologies are adopted to serve the diverse interests of user-organizations. It is pertinent to state that the adoption of Artificial Intelligence can automate several recruitment functions, thereby, making recruiters redundant, and placing their jobs at some sort of disadvantaged positions.

No doubt, Artificial Intelligence holds great opportunities for modern Organizations as they facilitate optimum resource usage, less time, people, and even physical infrastructures are expended to get better results. In this regard, Mukherjee opined that the Human Resource division which is one of the important departments in organizations that plays a pivotal role in managing employee relations, acquiring high quality talents, as well as fostering high employee engagement and retention. He however observed that as important as the Human Resource Department is in the day-to-day activities of the organization, such as payroll, benefits hiring, off-boarding and compliance management, all of this is changing with the continuous adoption of Artificial Intelligence to streamline operations and enhance their contribution to overall business goals. Many organizations are making key strides towards adopting Artificial Intelligence into their operations, helping them to be more accurate, consistent and error free, reduce wastage, reliable and flexible all towards increased productivity.

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In the same vein, Fitzgibbons (2023) after defining HR Automation as a method of using software to automate and streamline repetitive and laborious tasks to add value to company in strategizing and decision-making, outlined some benefits of Automation in organizations which include:

Less waste as a result of decreased excess paperwork, reduced cost of materials and manual workflows.

Data-driven decision-making which aids better reports, measure actionable items, analyze employee experience and find patterns within the data, which will help to create best practices.

Transparency and consistency in roles among staff and employees which can help create consistent HR practices throughout very large organizations.

Increased productivity and better resource allocation when it involves simple but tedious processes which give time and room for other pressing organizational needs.

Better security practices which help organizations to provide tools to employees who need them and organize protected information.

From the above, it can be conveniently established that Artificial Intelligence inclusion in Organizations save time and resources, with fewer personnel to arrive at same or better results.

Challenges Associated with Artificial Intelligence in Modern Organizations

The crucial nature of administrative functions embedded in Human Resource Management (HRM) are getting increasingly more complex, considering the ever-dynamic nature of work environment and the wider society at large (Nwafor, Ojiako, Okonkwo and Onyeulo, 2023). With the introduction of some sort of disruptive technologies, interpersonal working relationship is on the verge of extinction. This has adversely undermined the traditional methods in which employers and employees collaborate and communicate in the course of their daily routine. According to Noumani and Syed (2020), the greatest challenge for organization to consider is whether the technology adopted ensures no gap between the expected service and the actual service rendered by the technology, and is capable of analyzing needs of the organization and business readiness.

Fred and Osborne (2017) maintained that in the next two decades, robots will replace humans in 47 per cent of jobs, especially manual labour jobs. Supporting this view, Murphy (2017) added that a bricklaying robot can work six times faster than the average construction worker, without breaks and benefits. Importantly, exposure to robots not only triggers appraisal processes that culminate in job insecurity, but this sense of job insecurity would also be particularly strong relative to other sources of job threats (Kai et al, 2022).

Theoretical Framework

This study anchored on 'Resource-Based Theory' as a framework for analysis. Resource-Based Theory was originally propounded by Birger Wernerfelt (1984) and later developed and refined by Jay B. Barney (1991) and other scholars. It is a well-establish strategy to management with its origin linked to the historic writings of Edith Penrose's in the year 1959, which gave peculiar insights into the process of resource acquisition, utilization and expansion for gaining competitive advantage (Rugman and Verbeke, 2002).

According to 'Resource-Based Theory', resources that are valuable, rare, difficult to imitate and non-substitutable best position an organization for long term success. Such strategic resources can provide the foundation to develop and expand the capacity of organization which invariably translates to

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superior performance overtime. It portrays the ability of an organization to leverage on resources and capabilities to create desirable goods and services.

The underlying assumptions of the 'Resource-Based Theory' are:

Organizations that own strategic resources possess higher competitive advantages over organizations that do not.

Some resources such as cash and trucks are not considered to be strategic because competitors can readily acquire them.

A resource is strategic to the extent that it is valuable, rare, difficult to imitate and non-substitutable.

Valuable resources aid in improving the organization's effectiveness and efficiency while neutralizing the opportunities and threats of competitors.

If valuable resources are possessed by a few firms, those firms that are able to control these resources potentially tend to generate sustained competitive advantage over other competitors (Barney, 1991).

The Relevance of 'Resource-Based Theory' to the study of Artificial Intelligence and Human Resource Management

Resource-Based Theory maintains that organization's resources and capabilities are essential drivers of its competitive advantage. In this context, Artificial Intelligence constitutes valuable resources that can help organizations achieve their strategic goals and improve their competitive ability in the ever-dynamic organizational environments. In this context, Human Resource Management can aid in identifying, selecting and managing these resources to enhance greater efficient and effective service delivery.

Conclusion

Following a critical review of available literature, we can rightly assert that Artificial Intelligence, Robotics and Automation are all processes that are being programmed to perform the tasks that humans do within the organizational setting, on a day-to-day basis. Its worrisome effect can best be understood when we analyze the current demographic surge across the globe, side-by-side with the declining job opportunities – an indication of growing unemployment and widespread hardship for the teeming population. The implication of this for Human Resource Practitioners and Managers is that fewer human hands will be needed to run modern Organizations. As much as we appreciate the laudable contributions of this system in the work environment, its effect and the attendant implications to the working population is quite enormous. This tends to make the future of cordial and harmonious working relationships dicey and unpredictable.

Recommendations

For Human Resource practitioners to maintain some sort of relevance in the coming age of greater technological advancement and machine dominance, it is of utmost importance that managers re-examine their perception about the future, rather than being threatened by the thoughts of emerging developments. They must understand and strive to develop robust skills necessary for collaborative teamwork with the intelligent machines, and to fill the gaps which Artificial Intelligence cannot fill. Some of the requisite skills which are capable of helping managers to maintain their relevance include:

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Emotional Intelligence such that managers can continue to connect on a professional scale with the humanity who carryout task that are seemingly challenging to automate in organizations.

Managers must reinvent themselves and encourage highly-skilled subordinates to take of such tasks which Artificial Intelligence cannot do.

Managers must keep an open mind to continue learning, creating and exploring current and future trends.

Human Resource Managers must strive to improve themselves by getting acquainted with some form of digital skills in other to navigate the emerging trend.

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