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Review Article

Mechanization and Adaptation: Empowering Human Resources in the Era of Automation

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A B S T R A C T

Given the significant advancements made in artificial intelligence, machine learning, other technologies, the emergence of machines appears inevitable. Abstract The findings of this study counsel corporate executives to welcome change and devise strategies for reaping its benefits. Everything in the world will be automated by robots, which are here to stay. As technology develops quickly, HR will need to advance to keep up, which will eventually lead to the complete automation of HR functions. Human resources won't be an exception to this trend; the nature of work in the future will be more interdisciplinary, technologically advanced, multichannel, cross-functional.

The results of the study survey show that intelligent robotic systems offer a novel method for managing employees and enhancing business performance. There are many opportunities in the subject of human resources (HR), as well as several inherently problematic technological and ethical problems. Robotic automation has implications for HR strategies like work substitution, collaboration between humans and machines, visionary decision-making, learning experiences. It also has implications for HR activities like recruitment, training, development, conflict resolution, organisational discipline, culture, work performance. The HR function will need to alter significantly and actively embrace robotic technology if it wants to be relevant.

Keywords: Artificial Intelligence, Multichamnnel, Robots, Automation, Cross-Functional

Introduction

In the past, the human resources department, also referred to as "personnel," was primarily in charge of document management, ensuring that businesses conformed with state laws and compliance standards, setting employee pay, benefits, compensation packages. In their research, Wang, W., Siau, K. (2019), noted how the HR function of today is remarkably different from those of the past due to the introduction of a plethora of technologies that automate the majority of the work that was before performed by HR employees. This is due to the fact that the majority of the work that was previously performed by HR employees may now be automated thanks to these new technologies. Organisations use reporting and accurate HR data to verify their corporate culture, preserve their talent pool, efficiently hire new workers. In order to provide each team member what they need to perform at their very best, they also use HR analytics. In the present day, HR strategy is in charge of several different duties, including the following:

The motivation and morale of staff members

1. Maximizing the potential of employee contributions
2. Time on the job and additional pay for overtime
3. Attendance and organizational discipline
4. Activities for further education and professional advancement
5. Improvements in performance and output of work
6. Effective management of the staff turnover rate
7. Cultural factors
8. A culture of inclusive and diverse leadership throughout the team
9. Molding the experience of the workforce
10. Best practices for working from a distant location
11. Human resource analytics for insights into the workforce

Literature Review

(Rombo M, Tomé E, & T. Tomé. 2019. October). Robotics technology allows HR to automate time-consuming HR tasks like salary modifications and onboarding for many businesses that have already used it. (M. Rombo, E. Tomé, & T. Tomé. 2019. October). With the help of this cutting-edge technology, all of the apps can now converse with one another in the background and do activities without any human involvement. Some of the ways that HR Operations teams may change how they operate and the service they offer to employees on a daily basis include the HR service delivery platform, automated technologies like Facebook Slack and Workplace, robots in digital process orchestration.

(Rombo, M., Tomé, E., & Tomé, T., October 2019). For many firms that have already adopted it, robotic technology enables HR to automate time-consuming HR procedures like pay changes and onboarding. (Rombo, M., Tomé, E., & Tomé, T., October 2019). All of the apps may now communicate with one another in the background and perform tasks without the need for human interaction thanks to this cutting-edge technology. The HR service delivery platform, automated tools like Facebook Slack and Workplace, robots in digital process orchestration are some of the ways that HR Operations teams may modify how they function and the services they provide to employees on a daily basis.

Software systems may now communicate with one another without a person's involvement because to robotics technology. Robotic process automation systems, according to Gartner, execute "if, then, else" statements on structured data by combining user interface (UI) interactions or API connections to power client servers, mainframes, or HTML code. User interfaces (UI) and application programming interfaces (API) are used to achieve this. The deployment of bots to carry out tasks like job execution, data modification, or reaction or action initation follows the interpretation of other systems by robotics technology through the use of APIs or common user interfaces. Robotics technology efficiently mimics the repetitive tasks that a knowledgeable user would carry out in a software application in this fashion (Hmoud B, & Laszlo V 2019). Robotic automated bots monitor any triggers that depend on the presence of events in order to complete their tasks in a process without the aid of a human worker. By coordinating activities across a number of user systems, this not only makes it possible to carry out and perform HR duties quickly and simply, but it also minimises the danger of making mistakes while doing so and eliminates the need for human labour (Vorotnikov S et al 2018).

The platform can receive the form digitally and use the data to populate the information required to initiate the process or generate the document without the need for any human involvement at all. This eliminates the need for an HR team member to receive a paper form, manually start a recruitment process, or manually create a required file document. Both paper forms and manual labour are no longer required as a result of this. The bot itself might start a case in the case management section. Assist has the capacity to activate a function that alerts the appropriate HR team or individual when it discovers incomplete or erroneous data, allowing the issue to be fixed (Barcellini, F et al 2021).

Robotics technology has a logical and futuristic approach to the process of integrating new technologies into the platform. The initial stage in the procedure is to collaborate with businesses to create application cases. This stage makes sure that no time is wasted on the creation of a "interesting" invention that does not improve the general wellbeing of the users. The complexity of HR processes is reduced and operational tasks are completed faster when bots are utilised (Wilk-Jakubowski, G. et al. 2022).

Rana, G., Sharma, R. (2019), in their paper titled "Emerging human resource management practises in Industry 4.0," emphasised the fact that many Indian information technology businesses are employing robots technology for at least the laborious initial human resource operations. The verification of employment letters, the procedures for annual pay increases, labour law compliance measures, compensation pronouncements, technical paperwork, signing, contract filing are some of these procedures.

Unlike dealing with individuals who only operate during specific hours and require breaks, a robot can execute and work around the clock, every day of the year. In addition, bots have the capacity to manage a significant amount of labour and carry out repetitive tasks. By doing so, they can avoid giving drawn-out responses and make sure that execution quality is unaffected when compared to human performance (Vrontis, D. et al. 2022). When carried out by humans, case-sensitive data such employee

private information like social security numbers, phone numbers, addresses, among others, may be exposed and compromised, but this may be avoided when employing robotic deployment (Libert, K. et al. 2020).

Robotics employs an API-driven, template-based methodology. This guarantees its efficiency and stability. AC Lafeuillade et al. The bots transfer data back and forth using API requests rather than scripts. This makes guarantee that data is protected even if an application's user interface is changed. As a result, maintaining an enterprise requires less work, potential hazards are reduced. The template-based method enables the business to establish a library of reusable code, which makes it simple to duplicate typical use cases and linkages for HR capabilities, according to a study by Hoeft, Pieper, Eriksson, Bargstadt published in 2021. One of the main lessons from their work was this.

According to a KPMG study that was just released, practically all HR tasks can be fully or partially automated by using robots. Only five of the 21 roles, according to KPMG, are much less susceptible to robotic automation, including the following ones

Human performance and the overall design of the system (building a high-performance work system).

- Human resources and corporate strategy
- The efficacy of the organization
- Change management
- Relations with staff members

The acts move from one person to the next in a process that depends on its participants. However, in a digital process, activities are broken down because data is gathered from many sources, exceptions are sent to specialists who can fix them, everything is then put back together to produce a solution (Qamar Y et al., 2021).

One automated service that requires relatively little human intervention is the Ola platform, which combines GPS monitoring, statistical analysis, dispatching, invoicing, demand management.

In a research on the use of robots, notably in the context of crisis management, Wilk-Jakubowski, G., et al. (2022) conducted. Their findings highlight how crucial human resources are to crisis management. In their study from 2019, Oosthuizen, R. M., et al. discussed robots, artificial intelligence, smart technology in the context of developing the perspective of workers and their welfare in automated future work situations.

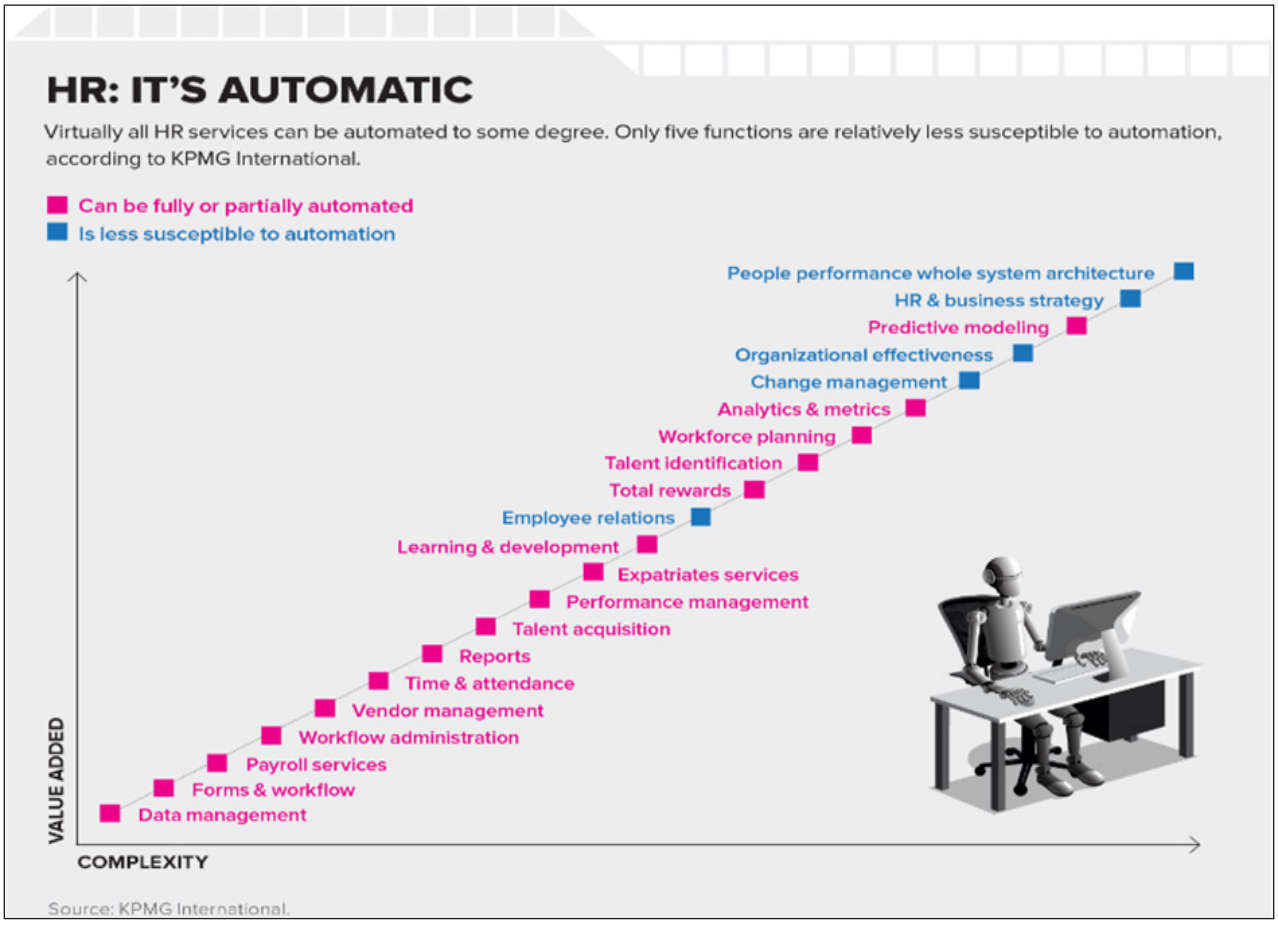

Figure 1

Figure 2.Advantages of Robotic Process Automation in HR

Research Methodology

More than 350 human resources directors working for a variety of organisations, the majority of which were multinational corporations, answered a questionnaire that served as the basis for this study. 42 percent of them worked for enterprises with a reported annual revenue of more than ten lakhs, half of them were employed by businesses with more than a thousand employees. More than two thirds of human resource professionals, according to the research, are aware that robotic process automation is now taking place in the HR sector. Despite this, just 40% of survey participants claimed that their company had an automation strategy.

The main barriers preventing the majority of organisations from adopting robotic process automation are a lack of funding and resources, a lack of knowledge of the automation process, the lack of accessibility to the right automation technology, a reluctance to plunge headfirst into a complicated process with numerous factors to take into account.

Observations as well as Evaluations

The survey's open-ended questions were useful for analysing the various problems that HR departments in various businesses are currently facing. It was noticed how these issues may be resolved by utilising automation and robotics to the fullest extent possible.

The Procedure for Selecting Resumes

Robotic bots can quickly and effectively sift through dozens of resumes and hundreds of application forms to find candidates for open positions. These bots will automatically compare the job description to the list of applicants in order to reduce the number of candidates who will be further reviewed. One might create unique data collection and analysis methodologies based on the specific demands. Candidates are informed through email that they do not meet the standards, while those who do are notified and asked to appear for an interview. These days, many businesses all over the world are using this technology to cut back on their time, labour, financial outlays.

Generate Offer Letters

Letters of offer must follow a predetermined set of rules and be specially customised to the applicant of interest. The fact that the HR professional must gather data from numerous database management systems makes the procedure time-consuming and frequently leads to errors. However, software robots are able to compile all necessary information, create and distribute the offer letter, check the suitability of returned documents. Or, to put it another way, robotic automation gathers all the pertinent information, draughts the offer letter, sends it to the potential employee.

Orientation for newly hired employees

It takes a lot of time to onboard new employees since several systems' data must be gathered in order to create the employee's new user account, email account, user system account, login credentials, other accounts. By automating the workflow approach, robotic bots make the process of onboarding new employees simpler. This is done by activating a template specifically created for the onboarding procedure. The bots can also make rule-based

decisions, such as deciding which credentials to give newly hired staff, which data to keep private, which documents to give them. As a result, creating a legitimate employee ID is made easier and faster, which lowers employee dissatisfaction.

Expenditure Management

Any submissions submitted after the deadline, missing receipts, fictitious trip logs, unclear expense claim justifications are problems with manual travel and expense management. These issues have a detrimental effect on how regulations are reported and how engaged employees are. As a result, programmable robots are increasingly finding use in the monitoring of individual expenses in comparison to established corporate rules and compliance with external expenditures.

Evaluation of the Documents Submitted for Review

Reporting is a labor-intensive process that calls for the gathering of relevant data and the application of a guiding methodology in order to reach conclusions that are well-informed and fact-based. As is the situation with the great majority of businesses, this is especially difficult when the data is spread across multiple platforms. Robotic automation is now being used to help HR analysis fulfil recurring compliance obligations. It can also be used as a filter for assessments and reviews of the company's operations, both internal and external. This makes the entire task pertinent, as well as quick and simple to do.

Tracking Absenteeism

Robotic automation is frequently used in the field of human resources (HR) to track employee attendance and perform the necessary payments. Absenteeism is constantly considered and recorded. These bots compare the timesheets or records that employees provide to the time that is recorded in the institution's system, if there are any inconsistencies, they alert the proper authorities. These software bots are also being trained to recommend staff redeployment in order to avoid delays in workflow or production.

Management of Data Relating to Employees

To increase the effectiveness with which they manage the data for existing and former employees, contractors, suppliers, newly hired employees, potential prospects, the HR team members are enlisting the help of robotic automated bots. Private personnel data must be protected since it includes compensation and benefits in addition to other crucial information, necessitating coordinated procedures involving numerous systems, databases, divisions. When this database is managed by robots, it can be updated frequently whenever there are changes, is interoperable with many different systems, has a significantly lower risk of inaccurate data entry.

Compensation Management

The data input process is just one of several arduous, high-volume, repetitive processes in compensation management. When a procedure is manually documented, there is a significant risk of blatant negligence, which could eventually undermine the integrity of the data. The risk increases when the procedure is carried out repeatedly. Bots are being used to include accurate data and lessen the possibility of any delays in the payment of compensation to employees and partners in order to avoid making expensive mistakes.

Compliance Issues

It is quite challenging for the HR staff to respond quickly and manually prepare status documentation because labour regulation in the majority of countries is frequently revised. Robotic bots take control in this type of situation, gathering and entering data from a wide range of various systems to conform to fast changing legislative requirements and deliver accurate results.

Exit Interviews and Standard Operating Procedures

Robotic automation can be used to improve employee experiences both when they are employed and when they leave a company, much like it can be used to improve employee experiences when they are hired. The majority of manual exit management solutions are subject to subjective error, which makes the move difficult. Agile robotic methodology in HR can be used to automate business procedures like preparing exit affidavits, carrying out exit interviews, notifying the pertinent business units and parties involved, rescinding access to a system, gathering company assets, processing full and final payments. This could improve the organisation and structure of the de-provisioning and off-boarding process.

The majority of respondents—roughly 70%—said that applying rules makes it simple to deploy robots technology in HR operations, that it can either complete a task or imitate human activity by altering existing application software. For instance, many businesses now use bots to automatically write employment contracts; humans merely need to oversee and keep an eye on the process.

An HR manager from a contact centre that uses robotic technology provided some figures that illustrated the advantages of optimising headcount, enhancing reliability, quickening the pace at which issues are resolved, expanding the business. Intelligent contact centre software can now analyse the questions clients call in with and take the necessary actions to solve the issue without involving a human. If the robot doesn't already know the solution, it

will either look it up online or on the company's internal network, or it will notify a human coworker about the problem. The robot then "observes" the human's subsequent actions in order to learn new reactions that it might use in the future.

65 percent of HR executives claimed that robotic automation in HR is slashing labour expenses by up to 42 percent and hastening the onboarding process by ten times. Deloitte's research, which claims that the adoption of robotic automation may result in cost reductions of 10–20% across all HR and general business activities, lends weight to this claim.

One-on-one meetings with management are regarded by 72% of HR managers as the single most crucial step in the onboarding procedure. They feared that the full automation and handling of onboarding by bots might have a detrimental effect on worker engagement and motivation.

Since the majority of small and medium-sized enterprises and organisations lack the financial resources to hire HR specialists, robotic automation is becoming more crucial. A single person who uses automated methods is required in these types of scenarios, according to 73% of those surveyed, rather than numerous people who are allocated to different job descriptions. As a result, the company's HR division can provide the candidates the regular corporate procedure at a price that is significantly lower.

To adapt and evolve to these procedural changes, HR professionals need advice and mentoring. This necessitates that they have a completely open mindset to accepting the change and going with the flow. To adapt and change to these procedural changes, HR professionals also need direction and training. All of the repetitive and time-consuming elements of their operational job will be automated, changing the nature of their work.

Giving control of human resource issues to machines has the potential to improve a variety of operational processes, including personnel onboarding and offboarding, as well as training and time management, among other things. 78 percent of participants in this study's survey told the researcher about this.

In human resource management, the implications of robotic process automation (RPA) transcend beyond just financial ones. Automation, which eliminates the bot and places more emphasis on the person, according to 82% of HR executives, brings out the most humane aspect of their line of work. Human resources personnel can actively recruit new employees, assist and promote the corporate culture, engage in other value-adding activities while robots execute the tedious, menial tasks. Several HR professionals also stated how they found themselves devoting more time to training and development efforts than to operational responsibilities. This was offered as the justification for the modification. Backend bots may easily link to a range of platforms, making it possible to automate HR processes that were previously challenging to do so.

86 percent of HR managers agreed that the goal of robotic process automation in HR is not to reduce the actual number of team members, but rather to enable those team members to work in a more efficient and error-free environment, allowing them to focus more of their time and effort on people-related responsibilities.

Everyone agreed that the key question was whether or not the workforce of the future will be run by nefarious, red and silver beady-eyed robots who would enjoy driving humans out of their work offices and cubicles to take their places as a result of automation.

According to 80% of respondents, they don't think it's likely to happen. The image will have some meaning if it takes terrifying robots to awaken HR professionals to the necessity of monitoring and responding to the workplace automation revolution—and the threat that a robot presents to the careers of many humans. Many people's professions are at danger due to frightening robots. There is no denying the fact that there will be greater automation in the future, all respondents agreed. The robots have shown up.

Eighty percent of those who took the survey agreed that knowing the likelihood of robotic automation could help people distinguish between those who advance in the HR field and those who are marginalised and eventually automated out of their HR roles, which could mean the difference between success and failure. According to 96% of respondents, the introduction of robotic automation would lead to a reduction in the number of generalist HR domain specialists in charge of time-consuming and repetitive transactional tasks. Concurrently, more HR staff members will be expected to participate in analytical tasks and more HR staff members will be expected to participate in other corporate initiatives, like diversity and inclusion.

According to 95% of respondents, human resource experts with outstanding business acumen, strong critical thinking skills, robust data analysis skills, a thorough understanding of people and psychology would be the best equipped persons to work in this setting. In a similar vein, 82% of respondents stated that in order to boost their value, lower-level HR professionals in their teams are now expected to comprehend human-machine interaction. Thanks to enhanced networking and quick access to the electronically encoded information, employees with less formal education can evaluate organisational data, including highly sensitive HR information. This makes it possible for all employees to access excellent ideas and solutions.

Conclusion

The following factors should be taken into account when creating an action plan for implementing and modifying human resources for human-machine interactions, according to the study's conclusions.

1. What types of environments do you think the robotic process automation will perform best in?
2. What are the quantifiable error rates, quality, accuracy levels of the data that HR is now handling?
3. In what stage are the widely used technical systems right now?
4. Is there a larger chance that already-existing cyber vulnerabilities could worsen, putting the security of HR data and business operations at risk?
5. What adjustments are other competitors making to the new technology and automating their processes?
6. What do both current employees and prospective new hires expect in terms of service, speed, mobility? Is the HR division able to rapidly meet their demands?
7. Does the HR department frequently have to deal with team conflicts or disciplinary issues because of the company's high turnover rate?
8. What is the present and long-term strategy for hiring talent to meet the demands of the new technology?
9. Is there widespread consensus that we should advance robotic process automation and artificial intelligence?

People should embrace and use robotic automation technology as it is already in existence. According to Ravin Jesuthasan, managing director at Willis Towers Watson and co-author of Reinventing Jobs: A Four-Step Approach for Applying Automation to Work (Harvard Business Review Press, 2017), robotic automation advances by obviating only those particular job functions where people are ineffective, unreliable, or at risk. This strategy was outlined in Reinventing Jobs. Robotic automation in the field of human resources (HR) provides the promise of better data management and the streamlining of expanding volume, principle- and regulation-based HR activities. As a result, workers are able to focus on tasks that are more people-focused, such as communication, training, development, workforce engagement, sensitive decision-making, other duties that all help to boost employee happiness. With the aid of robotics automation, the automation of HR operations is being extended into the field of orchestration.

The platform will employ automation to provide workflow management across several apps and will offer a wide range of interfaces to enable coordination of each challenging procedure. Human resources directors will need to reevaluate their teams as the relationship between humans and machines continues to gather speed in order to make sure that they have a mix of permanent employees, temporary employees, freelancers, on contract, robots. In summary, the promise of robotic automation in human resources goes beyond cost savings to include the development of workplaces that are more people-centered. It has become urgently necessary to alter human resources in order to stay up with technological advancement.

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