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By

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APPLYING ROBOTIC PROCESS AUTOMATION TO HUMAN RESOURCES



Robotic process automation [RPA] is the future of enterprise automation and a key pillar of a digital transformation policy. Soft Bank has invested \$300 million in RPA. RPA is an emerging form of business process automation technology based on the notion of metaphorical software robots or artificial intelligence [AI] workers. Robotic process automation is also a software tool that partially or fully automate human activities that are manual, rule based and repetitive. They work by replicating the actions of an actual human interacting with one or more software application to perform task such as data entry, process standard transactions or respond to simple customer service quires. Robotic process automation frees human from monotonous, low value-added tasks like data entry and makes them available for higher value tasks that require human creativity, ingenuity and decision making. It helps to ensure that outputs are complete, correct and consistent between tasks and human worker. Robotic process automation tools have strong technical similarities to graphical user interface testing tools. These tools also automate interaction with the GUI and often do so by repeating a set of demonstration actions performed by a user. Once Robotic process automation software has been trained to capture and interpret the actions of specific process in existing software application, it can then manipulate the data, trigger responses and can communicate with other system autonomously.

The following are the companies using RPA tool: Cognizant, Accenture. Capgemini, Deloitte, IBM, TCS, Infosys, KPMG. etc.

Impact of Robotics in Human Resource

- **Talent Acquisition:** The talent acquisition process to identify the right candidates and creating a shortlist of the candidates is very time-consuming process. RPA can be implemented to gather and screen resumes and online application forms, background

verification checks etc. By using RPA, the best candidates can be shortlisted and interviewed.

- **Pay Roll:** RPA can be implemented to maintain the pay roll of the employees. It will maintain the Pay checks, benefits administration, rewards and reimbursements, i.e. benefit invoice reconciliation can all be automatically tracked and produced by robots to avoid inaccurate submission and overall delays.
- **Data Management:** By using RPA, the employee data can be maintained accurately throughout the life time of the employee. Starting with an employee record creation by interacting with the new employee to enter the data accurately and complete, continued by data cleansing activities to ensure consistency across multiple systems in various formats.

Top 10 HR Tasks that are perfect for Robotic Process Automation

- **Resume Screening and Candidate Shortlisting:** RPA can be implemented to gather and screen resumes and online application forms do thorough background verification checks and compare the information against all relevant job requisitions.
- **Offer Letter Administration:** RPA can be implemented to conveniently craft offer letters for your new employees that are both tailor-made and accurate.
- **New Hire Set-Up and on boarding:** RPA can be implemented to automatically trigger a predefined on boarding workflow once the user account is created. Business rules assigned to the user profile guide robots to take decisions – for instance which system accesses to grant.
- **Induction and Training:** Through automation an automatic notification of certification requirements can also be scheduled as individual employee characteristics and certification status are compared against requirements.
- **Travel and Expense Management:** RPA can be implemented to compare individual expenses against predefined rules and regulations from different systems inside and outside the organization.
- **Monthly Payroll:** RPA can be implemented to verify the consistency of payroll system employee data by checking it against the data in the ERP system.
- **Employee Data Management:** RPA can be implemented to ensure accurate and complete employee data throughout the employee lifetime from the very first day –

starting with an employee record creation by interacting with the new employee to enter the data accurately and complete, continued by data cleansing activities to ensure consistency across multiple systems in various formats.

- **Reports and Analysis of Surveys and Company Reviews:** RPA can be implemented to fulfil pre-populating complex periodic reporting requirements for prescriptive and predictive HR analyses - even beyond the standard HR metrics like number of FTE's or average quote of absence.
- **Time and Attendance:** RPA can be implemented to validate records by cross-checking data (e.g. absentee reports against time logged in the corporate network) and giving alert when info is missing or inconsistent or reallocation of resources is recommended so that disruptions are avoided and the workforce is managed efficiently.
- **Exit Management:** RPA can be implemented to ensure a better organized off-boarding and the provisioning process by automating the process parts.

Recent trends of Robotics in HR

The Human Resource department is a very important or critical part of a business. The main function of this department is managing the relationship between the employees and ensuring that there is a high retention and employee engagement activities are occurring. However, the daily activities should be rich in resource intensive like hiring, compliance management, payrolls etc. But all these activities change when the HR department adopts Automation and Robotics to streamline functions and this helps to enrich the overall contribution to various business goals.

Perhaps, the recent research done in Ernst & Young says that about 93% of the time has been spent by the HR employees on repetitive duties. The same report says that the 65% of the HR based activities have that potential to get automated, and this is how the role of automation plays a vital role as it is already upgraded in EY.

The HR division has many transactional processes wherein many are ideally appropriate for the robotic process automation. With this, RPA organizations can automate HR duties which are rotated, rule based and can make themselves free and concentrate on different other decisive and innovative functions like retention, various scheme implementation and talent advancement.

However, the Deloitte report says that about 42% of the organizations are conducting Global Human capital trends survey which reported that they have completely implemented or has made significant improvement in adopting intellectual and AI technologies within their workforce. Another report says that 45% of the HR global shared services employees expressed their confidence on implementing which leads to at least 10-20% of their savings in business. In fact, IBM also partnered with Automation Anywhere (AA) to articulate the AA's RPA to IBM's portfolio of digital process automation software such as IBM Business Process Manager and Operational Decision Manager. This articulation has now opened up for the developers to create software bots that can manage rotative and duty-based work.

Robotic Process Automation in IT industry

In information technology industry, artificial Intelligence has become the keyword which defines the future and everything that it holds. Not only has Artificial Intelligence taken over traditional methods of computing, but it has also changed the way industries perform. Artificial Intelligence has had a positive impact on the way the IT sector works; in other words, there is no denying the fact that it has revolutionized the very essence of the space. Since the IT sector is all about computers, software, and other data transmissions, there is a relatively important role Artificial Intelligence can play in this domain.

Artificial Intelligence is a branch of computer science that aims at turning computers into intelligent machines, which would otherwise not be possible without a human brain. Through the use of algorithms and computer-based training, Artificial Intelligence and Machine Learning can effectively be used to create expert systems that will exhibit intelligent behaviour, provide solutions to complicated problems, and further help to develop stimulations equivalent to human intelligence within machines.

Data security is of the utmost importance when it comes to securing confidential data. Government organizations, as well as private organizations, store tons of customer, strategic, and other forms of data, which need to be secured at all times. Through the use of algorithms and advanced algorithms, artificial Intelligence helps identify potential threats and data breaches, while also providing the necessary provisions and solutions to avoid such loopholes hence helping to create a layered security system which enables a high-security layer within these systems. Others like improved productivity, automating processes, application deployment, quality assurance, server optimization are achieved through robotic process automation.

Robotics & AI have changed the entire working of the IT sector. The evolution of AI has made changes to the working pattern for the companies & the HR work has become even more easier, one such development of AI is the **“APPLICANT TRACKING SOFTWARE”**.

Capgemini’s approach for automation in selection is as follows

- Prepare-Identify and document process
- Eliminate- identify sources of effort and eliminate them at their roots
- Standardize- Standardise operation process within organization
- Optimize- reduce time spent in handling end-to end work
- Automate- Deploy technology to automate standardized processes
- Robotize- Use RPA for repetitive/rule-managed processes
- Augment- Add more intelligence and autonomy to processes with AI
- Re-imagine- Apply AI-first approach to challenge the status quo

It is an electronic based software that majority of IT companies like Infosys and Wipro are making use in the present scenario for recruiting the candidates. ATS helps the recruiters to automatically screen and filter the resources of the eligible candidates based on relevant criteria’s like skills, education, working experience & so on. This cuts down the work of the recruiter up to 60% & and also saves a lot of time compared to manually screening the resumes.

Customer Relationship Management (CRM) and Employee Resource Management (ERM) are popular in IT organizations.



Robotic Process Automation in Hospitality Industry

Modern robots can be either autonomous or semi-autonomous and may make use of artificial intelligence (AI) and speech recognition technology. With that being said, most robots are programmed to perform specific tasks with great precision.

The art of the reason why robots have emerged as a popular technology trend within the hospitality industry is because ideas of automation and self-service are playing an increasingly vital role in the customer experience. The use of robots can lead to improvements in terms of speed, cost-effectiveness and even accuracy.

One hotel, in particular, the Henn-na in Nagasaki, has chosen to replace its front desk staff with robots. Visitors can check-in, check-out, and the robots can respond to questions. This enables those visitors who have had a hard day or wish, little interaction, to slip quietly to their rooms.

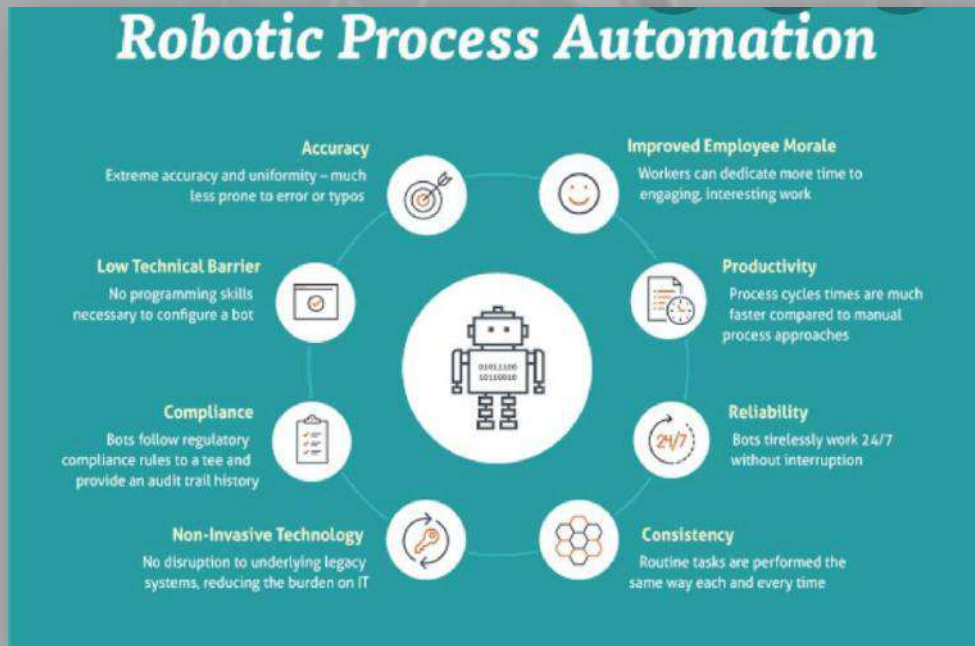
The first stay at a hotel can be daunting for a visitor, especially if he/she is not familiar with the area. Fortunately, one of the biggest bonuses of using robots is their ability to search and respond to customer requests for information instantly.

An example of this is Connie, the robot used by Hilton Hotels. It was the first AI-based robot to be used in a hospitality setting. Powered by IBM's Watson, and a feature of the front desk for when no-human is free. It can answer questions such as where is the nearest airport? Is there a French restaurant nearby? Plus, hoteliers can respond to inquiries about the hotel's spa, gym, dining timings, and other services. This puts information within easy instant reach for visitors, something which for hotels, frees up the time of staff.

The basis of a good guest experience is the hotel personalization of his/her visit. While human staff may be hit-and-miss at it, robotics in hospitality improves it dramatically. While a robot may not have a smile, it can recognize faces and remember names. Plus, just as crucially, remembers guest preferences.

For the regular visitor, it may have noted that he/she prefers a warm towel sent to the room on arrival. Or, that a particular red wine is drunk with dinner, and a specific hot beverage is preferred. All of which can be catered for when on arrival. As for new guests, robots help staff to keep a note their preferences, and purchases. The information is shared with team members on site, and with the broader chain. He/she will be surprised with the level of attentiveness and knowledge the robot has.

In certain situations, robots can perform with a greater degree of accuracy and consistency than humans would be able to, and 'human error' is eliminated. Moreover, robots can perform in dangerous or hostile environments, and can be programmed to perform actions that humans would be unwilling or unable to do.



Robotic Process Automation in Medical Industry



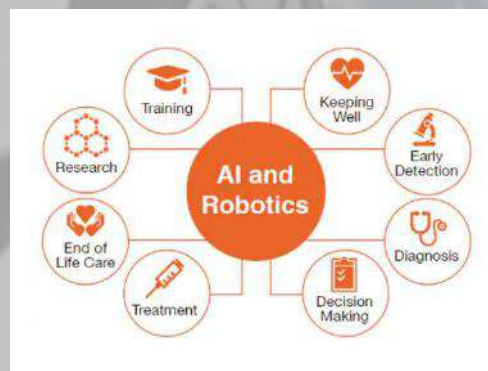
The application of artificial intelligence and machine learning in healthcare sector has been practiced for a long and no more medical practitioners and institutions are leveraging the technology not just to drive precision medicine but also at the back end for delivering better services. AI experts and practitioners in the field strongly feel that the country with its vast pool of unstructured medical data can turn itself into a perfect place to usher in the next phase of med tech to the country. With scores of AI start-ups and private players operating in the market presently, the adoption of AI in healthcare is expected to grow in coming years.

What does AI mean for healthcare?

Because AI requires copious amount of data, one is likely to see the most immediate benefit with its adoption in key performance indicators like time to hire and cost per hire.

- **Time to hire** - The average time to fill for a physician in 14 months. As competition increases in the talent marketplace, this time to fill is expected to increase. AI helps health care recruiters automate and streamline time-consuming tasks. Also, AI is getting increasingly sophisticated at doing what humans do, but more efficiently more quickly and at a lower cost. The potential for both AI and robotics in healthcare is vast. Just like in our everyday lives, AI and robotics are increasingly a part of our healthcare ecosystem.

The diagram below depicts the transformation in different areas of the healthcare sector due to the emergence of artificial intelligence.



- **Decision making** – improving care requires the alignment of big health data with appropriate and timely decisions, and predictive analytics can support clinical decision-making and actions as well as prioritise administrative tasks. Using pattern recognition to identify patients a risk of developing a condition- or seeing it deteriorate due to lifestyle, environmental, genomic, or other factor- is another area where AI is beginning to take hold in healthcare.
- **Training** – AI allows those in training to go through naturalistic simulations in a way that simple computer-driven algorithms cannot. The advent of natural speech and the ability of an AI computer to draw instantly on a large database of scenarios, means the response to questions, decisions or advice from a trainee can challenge in a way that a human cannot. And the training programme can learn from previous response from the trainee, meaning that the challenges can be continually adjusted to meet their learning needs. And training can be done anywhere, with the power of AI embedded on smartphone, quick catch up sessions, after a tricky case in a clinic or while travelling, will be possible.

How hospitals can improve their quality of hire?

The more efficiently a hospital runs, the better services it can provide to the public. But the larger success of hospital can be directly linked to its quality of hire, which measures how well individuals contribute to the overall success of the hospital. Because many talent acquisition teams are under time or budgetary constraints to fill positions, this important metric can sometimes fall by the wayside. According to the American Medical Colleges, there is a growing population of individuals 65 and over expected to grow by 50% by the year 2030 upcoming the demand for medical services. They calculate that by 2030 there will consequently be a shortfall of 14,800 to 49,300 primary care physicians.

Utilizing technology when making decisions.

Talent acquisition technology can help collect and assess data to measure quality of hire, determine the best sourcing channels, or predict turnover. The quality of hire is not an elusive metric; it is simply can touch upon so many other factors across talent assessment. Finding a comprehensive data collection system that can incorporate all the variables is important to giving an actionable insight into hiring- and improving its overall quality.

Robotic process automation enables to create a digital workforce that works side-by-side with employees to drive greater efficiency. RPA eliminates almost any manual process activity or task. Smart software robots comprising powerful and dynamic process flows automate the tasks that humans would otherwise perform. The **Kofax Kapow** robotic process automation platform is the fastest and most efficient way to build intelligent robots that handle processing of information virtually any application or data source, including websites, portals, desktop applications and enterprise systems- without any coding. Kapow helps quickly build, deploy and manage automated software robots that communicate bi-directionally across internal enterprise system and external sources as well.

Whether its patient enrolment, researching claims denials or any other manual business activity, by applying RPA to rules-based, labour intensive and error-prone processes in healthcare, and one can accelerate workflow, improve accuracy and free internal staff to focus on true process exceptions.

To conclude robotic process automation has a lot of applications in a number of industries including healthcare and medicine and it provides some very promising results, but just like any other new technology, it suffers from various challenges. RPA and its adoption can create

a lot of IT jobs for people to manage and maintain the software programs but on the other hand the fact that it will bring unemployment for a lot of people cannot be ignored.

Robotic Process Automation in Manufacturing Industry



Artificial Intelligence technology is now making its way into manufacturing, and the machine-learning technology and pattern recognition software as its core could hold the key to transforming factories of the near future. While AI is poised to radically change many industries, the technology is well suited to manufacturing. AI will perform manufacturing, quality control, shorten design time, and reduce material waste, improve production reuse, perform predictive maintenance, and more.

The manufacturing sector is evolving into a new state, fuelled by massive digital business transformation efforts. Artificial Intelligence (AI) is being used to support and even change the role of the human workforce in the physical workplace. The most dramatic impact of the technology is on bringing efficiency and simplicity to manufacturing's many complex processes and machine-machine interactions spanning products and assets, within factories and across global supply networks. AI is the driving force behind a new era of mechanization to made production decisions smarter and real time, having been an aggressive user of robotics and mechanization for decades. AI is the next logical step for the manufacturing sector to improve productivity, production line and tolling utilization as well as to minimize production cost per unit.

Today, Artificial Intelligence (AI) is reshaping the way companies hire, manage and engage with their workforce. Human Resource as a function has experienced significant changes in the last decade due to evolution of technologies. Advanced Data-driven Technology is rapidly making its way into the HR industry. AI and machine learning (ML), the current buzzwords in technology, have significant implications for human resource management practices. With the

threat of technology companies driving them off the most, a number of global automotive manufacturers have entered the multibillion-dollar race to develop technologies that will drive. Toyota, one of the world's largest automakers, Toyota has hired a top AI expert that was building robots that could respond to disasters, to run its new centre. In fact, there is such a strong industry need for top AI experts that many companies are recruiting them for academia, offering them strong financial incentives. And also in the industrial manufacturing GE Global operations have deployed RPA boots in processes such as matching orders numbers in incoming invoices to those recorded in GE's system, monitoring payment deadlines, recording receivables and checking the payment rates of industrial financial transactions. Microsoft follows six main themes in the Artificial Intelligence (AI) that is the

- Manufacturers are already seizing the AI opportunity
- Central to digital transformation is cultural transformation
- Those closest to the workforce, the managers and leaders inside manufacturing operations, are often most sensitive AI's impact on their workforce
- There will be disruption and dislocation, and they need a new pipeline of talent
- Next-generation policies and laws are needed for next-generation technologies
- AI is a journey different from everyone

Automation is revolutionizing business processes. To drive automation at scale, organizations need to overcome a range of business, technology and talent related challenges implementing automation. Developments in automation technologies-from robotic process- automation (RPA) to Artificial Intelligence (AI)-are transforming operational efficiency, productivity, and creating new revenue and customer experience opportunities.

How AI Will Impact Future of Manufacturing?

With robots attaining greater degrees of sensitivity in their touch capabilities, savvy manufacturers are embracing robotics in greater volume to increase efficiency and work rates on production. AI and robotics will be able to take over many assembly land movement-dependant activities on the evolving manufacturing floor, and reduce costs. At the same time, it will improve sensor and vision technology to create smarter, lighter and friendlier co-bots that humans can work with safety. For example, automobile maker BMW's self-driving Smart transport robot travels and send out communication on any critical situation it sees. The automation of manufacturing will also support the notion of mass customization and on-demand production of products. However, AI will bring challenges training will be a significant

issue when it comes to deploying AI. They have to ensure training it's through only implemented across departments, guaranteeing manufacturers understand what AI is, and how it can benefit and bring about the industry progression.

It is inevitable that AI will reshape the composition of the human workforce, freeing individuals from the repetitive, uncreative roles and allowing them to work on activities that add greater value. It will change the way organizations interact with people internally and externally and how the needs of those people are addressed. For example, AI deployment needs support from employees who may have concerns about roles that were perceived as 'skilled' being reclassified as 'unskilled' by the arrival of AI. Employees may also have reservations about the need to retrain and employers expected to continuously learn and perform multiple roles. AI and automation systems, employees may also be worried about being judged on the AI and automation skills and education rather their career experience. Nonetheless with the new realities of an AI-driven manufacturing sector clear, these changes will positively impact the industry and help deliver a direction and new employment opportunities through modernized technology.

To say that AI-based HR Applications have strong potential to raise employees' productivity and help HR professionals become knowledgeable consultants that boost employee performance, HR applications empowered by AI have an ability to analyse, predict, diagnose and become more powerful and capable resources. Employees will be affected by the AI function in multiple ways, so it is important to focus on employee needs and possible outcomes. The adoption and use of AI represent an exciting innovative leap forward for many in the manufacturing sector. The manufacturing sector shares the view that the long-term role of AI in the sector is inevitable. Considerations around employee training and advocacy along with long-term skill development will require. And while the positives of AI continue to outweigh the negatives, successful use of AI requires balance: greater automation but with equal emphasis on people engagement and skills development.

CONCLUSION

Robotic process automation frees human from monotonous, low value- added tasks like data entry and makes them available for higher value tasks that require human creativity, ingenuity and decision making. AI has taken over almost all areas of work and Human Resource is one among them. It is agreed that automation and robotic intelligence has paved the way and has become one of the most demanded technologies in today's world, and why not when it makes work easy and it increases productivity. It is still an ongoing debate whether AI actually

improves the work life or ruins it by taking away jobs of many. AI has made remarkable changes and has brought in new technologies that take over high-volume, repetitive operational tasks from HR employees, often the accuracy and speed of data processing – such as payroll, benefits enrolment, onboarding and compliance reporting that all require a significant amount of manual and repetitive labour.

AI has been improving the Hospitality Industry as well with robots in the front desk. Visitors can check-in, check-out, and the robots can respond to questions. This enables those visitors who have had a hard day or wish, little interaction, to slip quietly to their rooms. The reason why robots have emerged as a popular technology trend within the hospitality industry is because ideas of automation and self-service are playing an increasingly vital role in the customer experience. The use of robots can lead to improvements in terms of speed, cost-effectiveness and even accuracy.

The application of artificial intelligence and machine learning in healthcare sector has been practiced for a long and no more medical practitioners and institutions are leveraging the technology not just to drive precision medicine but also at the back end for delivering better services. Though now we are not talking about the excellent technologies we have in our hospitals but about the Human Resource aspect of it. The more efficiently a hospital runs, the better services it can provide to the public. The larger success of hospital can be directly linked to its quality of hire, which measures how well individuals contribute to the overall success of the hospital.

HR professionals mostly think that any process automation with or without robotics will require IT and a considerable amount of human intervention. However, Robotic Process Automation is different as it is meant to be configured and leveraged by subject-matter experts outside IT. By implementing RPA, HR practice can look forward to improvements in their HR data management & reporting, HR process flow, functionality and employee experience. Robotic process automation has a lot of applications in a number of industries including healthcare and medicine and it provides some very promising results, but just like any other new technology, it suffers from various challenges. RPA and its adoption can create a lot of IT jobs for people to manage and maintain the software programs but on the other hand the fact that it will bring unemployment for a lot of people cannot be ignored. But it is inevitable that in the years to come we will see AI in all areas of work and in our households as well, who wouldn't want their work to be done effortlessly and at a faster pace than Humans?

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