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IS SMART ROBOTICS WITH INTEGRATED AI, THE NEW NORM IN BUSINESS? – A LITERATURE REVIEW

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ABSTRACT
COVID19 has proved to be the most disastrous in economic slowdown. But few of the organizations were able to operate in their normal mode with the help of Robotic Process Automation with integrated AI. People had a general opinion that, RPA will take away their job, but this has proved wrong and has now helped in sustaining and continuity in businesses. This review focused on understanding whether employers and employees are in support with RPA benefits, the cost effectiveness, increased productivity and standardization.
KEY WORDS: Robotic Process Automation, Artificial Intelligence, Sustainability, Standardization

1. Introduction:

The contribution of IT (Information Technology) industry is predominant for the last three decades. The industry's contribution to our nations' GDP is around 7.70 percent. Four million people are employed in this industry. Every year more than a lakh of jobs are created in this industry.

Business Process Management (BPM) sector belongs to the IT industry and is growing at a CAGR (Compound Annual Growth Rate) of more than 10 percent attracting a major chunk of business from USA (USD 74 billion out of USD 167 billion). It is further estimated that the industry will grow to USD $ 350 billion by the year 2025. This sector of IT has become the destination to and claims to own 55% share of the US and around 38% world's IT-BPM business. India has a very talented and skilled work-force qualified in computer science and technology and accounting fields made the country the most preferred destination for IT & ITeS (Information Technology enabled Services) in the world and further continues to be a leader in the global sourcing industry with greater per cent market share.

1.1 Concept of AI and RPA:

Artificial intelligence (AI) is defined as the simulation of human intelligence processes by machines, especially computer systems. For example, AI includes expert systems, natural language processing (NLP), speech recognition and machine vision.

Robotic Process Automation (RPA) is defined as the process of automating business operations with the help of robots to reduce human intervention. It's a powerful change agent to automate manual work processes and fill the gap and reach to a digital future.

1.2 Impact of AI & RPA:

AI and RPA together can deliver real value in different ways. These can deliver positive and high return on investment (ROI) with minimal upfront investment. Automation technology can support companies achieve their business goals, hence most of the companies are inclined to adopt and many of them have already harvesting the fruits of the technology.
However, with lack of proper understanding of an initiative's ROI, no company will be able to make effective decisions and justify investments in automation. In order to effectively implement AI and RPA, the initiative team is responsible to focus on ROI while planning, execution and governance.

2. Review of Literature sourcing International authors and International Journals.

There is good number of research papers published by international authors in international journals. The review some of the selected papers is presented below:

a) Ajay Agrawal, Joshua S. Gans, & Avi Goldfarb (2017) have made a paper on 'What to Expect from Artificial Intelligence'. The objective of the paper was to make understand how advances in AI are likely to change and transform the workplace and the work of managers and where AI delivers the most and desired value.
Further the researchers describe the merits and demerits of AI and concept of Machine Learning (ML), the uses of employing predicting machines and the challenges.

b) Can Tansel KAYA et al (2019) have made a research paper on 'Impact of RPA Technologies on Accounting Systems'.
The purpose of this paper was to analyze the implementation and improvement areas of RPA in Enterprise Resource Planning (ERP) and Materials Resource Planning (MRP) within the scope of financial reporting systems in the context of changing cost accounting systems.
This paper will also trace out the impact of RPA technologies on traditional accounting and cost accounting processes and broadly explain the need of strong integration between accounting systems, Industry 4.0 and RPA technology. In the light of this revolutionary and evolutionary shift, a bird's eye view of the future of Accounting Function and Strategic Accounting Management (SAM) are analyzed and examined by the researchers.
Finance and accounting functions, the authors say, are the living organs of the business organizations, and they are always under pressure in terms of keeping up with improvements with the help of latest technologies. RPA technology has significant impact on accounting and finance certainly. An automated accounting workplace will change the role of an accountant significantly. Many time-consuming and manually processed jobs will get replaced by RPA technology and robots thereby the human accountants will have adequate time and scope to focus on strategies and analyses thereof. Further the researchers claim that the staff can spend more time on decision support, predictive analytics, and performance management. While explaining the merits of the technology they listed the following merits of automation of finance and accounting: a) improves the time efficiency of accountants, b) creates real-time access to financial data hence the reporting and analysis both can be done simultaneously and continuously. Further the authors claim that *'RPA is not replacing accountants; it evolves their job in a progressive and positive way and enables them to focus on the greatest value they can provide to their organization'*.

c) Dahlia Fernandez & Aini Aman (2018) have made a study on 'Impacts of Robotic Process Automation on Global Accounting Services'.
The aim of this study is to know the impact of Robotic Process Automation (RPA) on Global Accounting Services (GAS) using the institutional logic lens *(Institutional logic is a core concept in sociological theory and organizational studies, with growing interest in marketing theory. It focuses on how broader belief systems shape the cognition and behaviour of actors source: www.en.wikipedia.org).* This is a case study approach done in one of the largest global business service firms that provides global accounting services. The result of the study proved that RPA technology has significant impacts on individual and organization in terms of reduction of work leading to reduction in the number of employee that amount to less wages and salary bill.

d) Damian Kedziora and Hanna-Maija Kiviranta (2018) did research on 'Digital Business Value Creation with Robotic Process Automation (RPA) in Northern and Central Europe'.
This research is basically a pilot study on RPA. The objectives of the research are:
i. To know motivations and factors influencing service automation initiatives in Northern and Central Europe from the digital business value creation perspective,
ii. To find causes that lead to sales value generation with actual impact on business, growth, profitability and Full-Time-Equivalent (FTE is to determine how long it takes an employee to complete the transaction currently, and estimate the time it will take a robot to complete the same transaction. The time savings per transaction completed multiplied by the number of transactions will give the figure of number of employees to replace by robot) value.
The research results show that there is significant impact on FTE savings due to automation of all manual works. Further the researchers are confident that the employees will lose their jobs due to RPA initiation. Their job will get enriched and will be high-end in the place of routine and mechanical.

e) Dariusz Jędrzejka (2019) made research on 'Robotic process automation and its impact on accounting'.
In this research paper the investigator explain the concept of Robotic Process Automation (RPA), and to find the ways it impacts accounting function and suggest future research directions.
The researcher finds that there is more scope for automating accounting processes with RPA and further opines that robots are to replace accountants for a considerable part of their tasks which results in reduction or removal of entry-level accounting positions and foresee the significant transformation of the role of accountants in future mostly with the responsibilities of business advisory and leading the RPA transformation for which they need to be trained in soft skills, technology and data skills. Further the authors of the paper caution about the negative effects of (RPA) employing robots to the management and also suggest having more comprehensive idea of the effects of RPA on financial and non-financial issues.

f) Edith Mihaela Dobrescu et al (2018) researched on 'Artificial Intelligence (AI) - The Technology that Shapes the World'.

The researchers have made a conceptual paper to explain about AI, its uses in various fields such as car robots, bank robots, financial robots, marketing robots, robots in space, medical robots and military robots and so on. Further the authors explore the benefits of using AI in human professional and personal life. Also caution about the over use of technology and challenges to face and warns about over dependency on technology.

g) Elvira Nica & Cristina Manole (2018) have done research on 'A Labor less Society? How Highly Automated Environments and Breakthroughs in Artificial Intelligence bring about Innovative kinds of Skills and Employment Disruptions, altering the Nature of Business Process and affecting the Path of Economic.

This research was carried out to study whether RPA and AI replace the human workers and how the workers react to the introduction of RPA and AI technologies. The researchers found that the introduction of technology will replace the routine and mechanical jobs and the responsibility of the employees become high-end which they call it 'significant change in task'. Further they found that the benefits of the use of RPA and AI are far greater than the loss due the automation.

h) Fung HP (2014) published a research paper on 'Criteria, Use Cases and Effects of Information Technology Process Automation (ITPA)'.

The researcher has talked about Information Technology Process Automation (ITPA) in this paper. It was observed that most of the IT and IT outsourcing service providers are adopting Information Technology Process Automation (ITPA) to deliver the services to end users in professional way to yield significant cost reduction in the IT operations. The objective of this study is to know ITPA criteria, the effects ITPA in terms of merits and challenges or negative effects and factors to consider when adopting and deploying it process automation which are listed as follows:

i) Criteria for IT Process Automation
a) High volume of transactions
b) High value of transactions
c) Frequent access to multiple systems
d) Stable environment
e) Limited human intervention
f) Limited exception handling
g) Manual IT processes prone to errors or re-works
h) Ease of decomposition into clear IT processes
i) Clear understanding of current manual costs
ii) Benefits of IT Process Automation
a) IT service repeatability
b) IT service predictability
c) Better IT services integration
d) Increased IT service productivity
e) Increased IT services satisfaction
f) Reduced IT service risk
g) IT service cost effectiveness
h) Improved business performance
iii) Negative Effects of IT Process Automation
a) Job lost for some IT staff
b) IT staff needs to be re-skilled
c) IT staff job complacency
d) Diminishing of personal touch from IT staff
e) Costly deployment of ITPA
iv) Factors to Consider When Adopting and Deploying IT Process Automation
a) Justify with a business case
b) Start small think big
c) Use the right human resources

i) Hajo A. Reijers, et al (2019) did research on 'Robotic Process Automation: Contemporary Themes and Challenges'.

The authors of this paper gathered exhaustive information starting from the concept and definition of RPA, features of it, merits and demerits of adoption of it and future challenges creeping into the business firm after execution of this technology. Infact they reviewed a lot papers to address all the above mentioned.

j) Karippur Nanda Kumar researched on 'Robotic Process Automation- A Study of the Impact On Customer Experience In Retail Banking Industry'.
The main aim of the research is to find the key factors that determine the adoption of RPA in the retail banking industry to enhance the customer experience and satisfaction.
The retail banking industry has been undergoing a paradigm shift. Robotic Process Automation (RPA) is increasingly accepted as a strategic priority for banks to maintain competitive advantage and increased profitability. The researcher is firm on benefits of adopting RPA services in retail banking is to automate routine and repetitive processes, so that banks can improve efficiency, accuracy, operate 24/7, reduce cost and offer innovative services and better experience to customers
The study focuses on factors influencing the adoption of RPA in the retail banking industry. Results highlight that factors such as security, privacy, reliability and usefulness are significant in advancing RPA in the retail banking industry.
k) Lacity M et al, (2015) published a paper on 'Robotic Process Automation at Telefónica O2', The Outsourcing Unit.
The purpose of this paper to assess the current and long-term effects of business services automation on client organizations. The author claims that automation is not a new concept but service automation has been on the rise due to the emergence of new technologies such as Robotic Process Automation (RPA) and Cognitive Intelligence (CI) tools. Further the researcher claims that the potential adopters need exposure to actual and realistic client adoption stories to make them aware of the pros and cons of the technology and advise the academic researchers to take up research projects to assess the capabilities of the software of actual RPA and CI implementations in the client firms. This type of research helps the potential adopters of the technologies.
l) Lacity M et al, (2016) presented a research paper on 'Robotic Process Automation: The Next Transformation Lever for Shared Services'.
The researchers aim was to assess the shared services in adopting the RPA, advantages and disadvantages of adoption of RPA and other automation technology.
The observations of the investigators in terms of benefits of automation are stated as follows:
a) The main business drivers for service automation were doing more work with existing staff resources, focusing internal staff on more interesting and critical work, and improving service speed and quality.
b) FTE savings occurred, but the freed FTE human resources were deployed to higher-value work. None of these organizations lay off staff because of automation.
c) All client organizations responded in their research planned to adopt more service automation in the near future.

m) Marek Vochozka & Tomas Kliestik (2018) published a research paper on 'participating in a highly automated society: how artificial intelligence disrupts the job market'.
The researchers have discussed in this research that how AI disrupts job market based on the reports of Accenture, The Economist, Frontier Economics, PitchBook, and Tractica. They are of the opinion that the advent of artificial intelligence is bringing about innovative roles and cutting-edge opportunities for workers provided they are trained in those skills. It is understood that adopting AI is indispensable for the businesses and that helps them to deliver good experience to their customers.
n) Melissa Connolly-Barker, (2018) did research on 'Advanced Automation Technology, Labor Market Insecurity, and Collective Joblessness: The Determinants, Constraints and Employment Effects of Robots and Artificial Intelligence on the Realm of Work'.
The investigator has found that labor-saving technology brings significant reduction in operational cost on one hand and job enrichment for the employees to perform more knowledgeable, cognitive and face paradigm changes in their job profile. Mobile robots, smart machines, and artificial intelligence improve the synergetic worker–machine interaction. Well trained and good knowledgeable employees will use mobile robots and smart machines to enhance and not to substitute jobs.
o) Naumov, N. (2019). The impact of robots, artificial intelligence, and service automation on service quality in hospitality. In Ivanov, S. & Webster, C. (Eds) Robots, Artificial Intelligence and Service Automation in Travel, Tourism and Hospitality. Emerald Publishing, UK. (Pre-publication version).
The researcher aimed to critically evaluate the implementation of technologies from the perspective of guest services, innovation and visitor experiences in the hospitality industry. Therefore the paper focuses on the value of robots, the need of service automation and the use of artificial intelligence in hospitality and examines their influence on service quality.
Adoption on robots has been increasing in the service industries in general and hospitality industry in particular. Everyone believes that perfect and strategic automation of the services in hospitality industry lead to competitive edge for the company.

The author felt difficulty of drawing a right balance between digital and human interaction to yield better experience and satisfaction on the part of customers. Further the combination of technology and human should not yield bitter experience that damages the reputation of the company.

3. Conclusion:

The summary and conclusion of the above stated review is as follows:
The majority of the researchers are in support with RPA and AI to reap out the benefits from the customers' employees' and employers' (management's) perspective. Technology use yields cost effectiveness, speedier productivity, uniformity and standardization in the production, competitive edge or advantage. Further use of technology is indispensible to survive in the competitive and dynamic business world. However use of technology may create joblessness temporarily in the short term. By training and sharpening the skills of the job-lost employees again are used in the high value oriented jobs which definitely creates job enrichment which leads to job satisfaction.

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