

# Application of Robotic Process Automation in Service Sector

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## Abstract

The current development and growth in information technology and increasing role of artificial intelligence in present modern business life have a vast impact on the life style of human being. The business is exploring new opportunities for raising profitability by the use of information technology and artificial intelligence, which have resulted in limit less possibilities in the field of Robotic Accounting. The aim of this paper is to explore the possibilities and uses of artificial intelligence in the field of accounting to make the accounting process completely automated and further to find the challenges and solution for the same. This paper is discussing about few of the opportunities and challenges facing the Robotic Accounting.

**Keywords:** Robotic Accounting, Artificial Intelligence, Information Technology, Business Environment.

## Introduction

Recently, the business organizations though have implemented latest technological, advanced discoveries and developments in various aspects of the business. There have been very slow changes in the accounting functions of the organizations. Still the organizations are dependent on paper based human labour and skills in accounting work which has its own confines and hindrances. There has been great progress in accounting field as “Artificial Intelligence” which can be implemented to accounting processes of the business organizations, resulting in the automation of the accounting functions. Implementation of latest technology in building robotic automated accounting process would tremendously benefit in unimaginable manner as it would dramatically reduce the time consumed in accounting. Robotic Process Automation would increase the reliability of data and accounting as it is error free. Further, the organizations can utilize the resources in other important processes.

## Features

Robotic Accounting automates the complete accounting activities with the help of Software and computer programs. The cost of

implementation of robotic accounting is much less than full time employees in long term. Implementation and use of Robotic Accounting would free up high value resources which can be utilized for other important from line activities and thereby enhancing the productivity and better customer satisfaction. Robotic Accounting would be free from risks associated with human errors or lack of knowledge and skills of employees and thus enhances the operations accuracy. Further, Robotic Accounting would lead to improved reporting which would help in effective decision making and thus, enhancing Corporate Governance. Another important features is Robotic Accountancy is cost effective and does not require overhaul change in the IT infrastructure. It can be effectively implemented on the existing IT Infrastructure as no major investments are required.

### **Role**

Robotic accounting would help in faster Processing of various accounting information such as Vendor Contact Information, Invoices, Purchase orders, Delivery status etc. Use of software and robotic accounting would speed up the accounting process and can identify errors on real time basis. Not only that it can identify the errors, it may also offer solution to the same. Robotic Processes can establish effective co-ordination between different department. It can process the information which can be utilized as raw material by another department and thereby, can effectively track the business activities. Most importantly, Automation Software's used for robotic accounting can reconcile the accounts much faster than employees and can identify the mismatch and correct the same. The accounting is quicker and accurate with the help of Robotic Automation Software's.

### **Advantages of Robotic Accounting**

Robotic accounting or Robotic Process Automation is a technological boon for the business organizations. The business organizations can implement technological advancements without incurring excessive additional financial burden by upgrading the existing setup by making some advancement or minimal investments. It does not require significant capital investment and can be

implemented with existing digital setup with minor modifications. Robotic Process Automation works on real time basis and complex data can be consolidated and analysed immediately. It also ensures error free results with incredible precision, accuracy, and speed and thus results in efficiency of the business processes. The major benefit of robotic accounting is that it does not have work hour limitations and it can perform its functions round the clock without any leave or rest. In absence of time boundations and limitation of human body and mind, robotic accounting would tend to increase productivity by thousand folds. The use of robotic process automation in hazardous industries would minimize probabilities of any harm or loss to human life.

### **Disadvantages of Robotic Accounting**

Though robotic accounting is a boon to the modern business processes however, it also has certain disadvantages. The major disadvantage is heavy initial investment costs where industry or organization is having paper -based accounting setup. It would require significant investment for setup of the Information Technology Infrastructure and purchase of costly software and hardware. Robotic Process Automation also carries threat of job loss in the industries as the software and computers can perform functions of several persons without any limitation of time. Unemployment is already a challenge before the Governments and implementation of artificial intelligence and robotic automation processes would further aggravate the problem. Increasing use of technology would also increase dependency on the technology and it also has emerging challenges of data theft, data loss etc. The organisations implementing robotic process automation would require highly skilled staff which is another challenge.

### **Challenges of Application of Robotic Accounting in Modern Business Environment**

The implementation of the Robotic Process Automation or Robotic accounting in the modern businesses though appears lucrative and promising however, there are numerous challenges in implementation of the same. The major challenge is lack of research in this area. The existing

research does not address the limitations and difficulties in developments of algorithms in accounting field. A minor error in algorithm or software application may result in major accounting or auditing crisis. Another challenge in implementation of RPA or robotic accounting is digitization of every transaction. In India, a big part of market and business relies only on paper-based accounting system and where an organization which seeks to implement RPA, has business clients, partners, customers or agents who majorly rely on paper-based accounting system, it may become impossible for the organization to implement RPA. It is again a challenge to develop Artificial Intelligence which learns and acts as per the human behavior in matters of business. The machine learning of any Artificial Intelligence would be severely flawed if any wrong flawed data is fed.

Developers of Robotic Process Automation software and artificial intelligence targets large scale business organization while major part of market is still operating at small or medium scale.

Increasing cybercrime is also posing as a major challenge to implementation of RPA is a serious concern for the developers of RPA software and Artificial Intelligence in the field of accounting.

The implementation of RPA would also require adequate Auditing system in place.

### **Suggestions of Adoptions of Robotic Accounting in Business Environment**

Introduction of Robotic Process Automation in respect of accounting in different industries has its own challenges. There are challenges which are common to all type of industries whereas, there are numerous challenges which are industry specific and therefore, while developing programs and algorithms for implementation of RPA, such industry centric aspects and challenges are required to be addressed by the developers. Some suggestions to adopt RPA in different industries are as under:

#### **Hotel Industry:**

Robots and Information Technology has found application in different departments of the Hotel Industry both in the

front office and in the Back Office. The guest experience can be divided in five stages in the hotels namely pre-arrival, arrival, stay, departure and assessment. All major hotels provide chip-based room keys to the guests. These keys can further be used for availing various services in the Hotel such as dining, access to gym and pool, access to service of the hotel etc. The data would be saved in the key and also in the master computer while availing the services and at the time of departure, a simple swipe of the key can automatically prepare the bill of the guest. Further, the data stored in the main computer may further be used by Accounting software in preparing and maintaining of the accounts without any intervention of the human being.

#### **Bank:**

The Banking sector in India is speedily adopting and implementing Artificial Intelligence related applications and software's in handling its customer queries. The banks are required to develop AI enabled app, Conversational Banking, to help consumers with financial and non-financial transactions, answer FAQs (Frequently Ask Questions) and support interaction of customers with the bank for loans, investments, deposits or other products.

#### **Education:**

Education sector in India can be divided in two parts viz Basic Education and Higher Education. Basic education is largely dependent on Government run School and there is no or minimal use of technology in the administration and management. The private schools are also not at better footing and use of technology is minimal. The robotic process automation can be developed and introduced for implementing automated processes for enrolment, Shortlisting, admission, payment fee, attendance management, teacher parent interactions etc. Similarly, in High Education section Universities are required to implement RPA for a range of internal processes, allowing them to develop more modern, sophisticated administrative operations. Universities should also develop chatbots which can help automate the general queries from students, staff and website visitors like admission schedule, admission process, contact person, course information.

## Transport

Airports and airlines throughout the world are keen in exploring and adopting artificial intelligence and implementation of robotic processes in their ecosystem. The airlines are utilizing the technologies for the purpose of automated booking, checking, enhanced passenger experience, luggage management supporting the customers or making their services better, among others.

The road transportation sector in India has been very slow in adopting technological changes. Road Transport system can implement RPA by automation of passenger booking, Goods transportation booking, inventory management, automated Bill of lading, real-time tracking of vehicle, enhanced passenger experience etc.

The Indian Railways is still dependent on human labour for the track maintenance and track management. The robotic process automation can be implemented for automatic railway track cleaning systems, the Internet of Things (IoT) with multiple sensors to monitor employees and tracks, drones to monitor and scan tracks for faults and pilferage, and prevent potential derailments. There is severe need to take the use of automated processes and AI based system to automate cleaning, management of railway stations, enhanced passenger experience, catering and food services to passengers etc.

## Hospital

Healthcare industry has been slower in adopting technologies to automate various processes. In order to cater the need of the healthcare system it is important to develop Artificial Intelligence that could collect and analyse the data of patients and different ailments. Development of Chatbots With NLP (Natural language processing) and AI would help in interacting and collecting information from the patients suffering from contagious diseases. Hospitals may implements RPA for patient registration, appointment with doctor, sample collection for various tests, delivery of reports, timely follow-ups, health insurance claim automation etc.

## Review of Literature

An effective literature review enables the researcher to learn and add knowledge from previous theory on the

subject. Kadambini, Katke (2019) aims at understanding challenges of automation adoption in banking and financial services. Similarly, N. Abhishek and M S Divyashree (2019) based on business and financial information in accounting and auditing. Rao, Abhilash Nissankara (2019) study on one city and only one mall has been selected. Ahuja, Anjali. (2018) study is based on multi-server queue, balking, optional service and finite population. Osaremwind, Ogbeide and Oghenemega, Ejechi (2018) focused on ATM Service queues only. Kale, Ajinkya (2017) this study is limited to queue management using conveyor belt and sensors at public or holy places.

## Research Gap

On the basis of above literature following inferences have been drawn:

1. No study was conducted on robotic accounting.
2. There was no study on combined service sector.
3. There was no study adoption of robotic accounting in service sector.

## Objectives

Following are the main objectives of the study:

1. To study the opportunities of Robotic Accounting in modern business environment.
2. To study the implementing factors of Robotic Accounting.

## Hypothesis

H0 : There is no awareness about the robotic accounting in service sector

H1 : There is proper awareness about the robotic accounting in service sector.

## Research Methodology

Universe : Users of service sector in Jaipur

Sampling : Convenience sampling method

Data collection : Structured questionnaire through online

## Data analysis and interpretation

It is clear from the drawn inference that the present study is focused on male respondents (64.2%) and 31 years to 40 years age group (65.7%). Similarly, experience respondents (38,80%) and service sector respondents (35.80%). Finally, it can be drawn from the above table that

all the factor of Robotic Accounting is positively affected the evaluation system. On the basis of information received from the questionnaire that they are aware about the robotic accounting but due to the risk associate or might be lack of proper awareness about the robotic accounting, they may not able to adopt it. Hence, data reveals that the majority of the respondents are in favour of applications and

implication process of robotic accounting in their service sector. Therefore, it may be concluded, robotic accounting will increase the level of performance of employee as well as it increases the growth of the business organisation. The detail analysis and interpretation are explained in the following tables:

**Table: 1 Descriptive Analysis**

Particulars		N		Mean	Std. Deviation	Range
		Valid	Missing			
The existence of RPA is important in service sector	Existence	5	0	13.4000	13.55729	32.00
The application of RPA is helpful to maintain their business crises	Adoption	5	0	13.4000	15.12614	38.00
The RPA should be feasible for service sector	Feasible	5	0	13.4000	17.72851	<b>43.00</b>
The application of RPA in service sector is a curative tool for business level	Curative tool	5	0	13.4000	14.74110	37.00
The RPA will improve service delivery and all necessary business transactions	Improve service	5	0	13.4000	15.24139	39.00
The effect of RPA can helpful for business to enhance their profitability	Improve profitability	5	0	13.4000	16.22652	<b>40.00</b>
The RPA will increase the efficiency and effectiveness of the employees	Increase efficiency	5	0	13.4000	12.66096	31.00
The service sector must have knowledge about the factor affecting RPA	Knowledge	5	0	13.4000	16.42559	<b>40.00</b>
Proper training programmes should be arranged for updating of the knowledge on RPA in service sector	Training programme	5	0	13.4000	14.11737	33.00
The service sector is aware about the risk associated in the adoption of RPA	Risk associated	5	0	13.4000	11.52389	27.00
RPA allows management to evaluate to performance of employees at their workplace	Performance Appraisal	5	0	13.4000	13.88524	35.00

Source: Primary data

On the basis of the above table it can be concluded that the robotic accounting is more feasible for service sector. With the help of proper knowledge and training programme

about the robotic accounting the efficiency and performance of the employees as well as organisation can be improved.

**Table: 2 Chi-square Test**

	Chi-Square	df	Asymp. Sig.	Decision
The existence of RPA is important in service sector	.000 <sup>a</sup>	4	1.000	Accepted
The application of RPA is helpful to maintain their business crises	.000 <sup>a</sup>	4	1.000	Accepted
The RPA should be feasible for service sector	.000 <sup>a</sup>	4	1.000	Accepted
The application of RPA in service sector is a curative tool for business level	.000 <sup>a</sup>	4	1.000	Accepted



	Chi-Square	df	Asymp. Sig.	Decision
The RPA will improve service delivery and all necessary business transactions	.000 <sup>a</sup>	4	1.000	Accepted
The effect of RPA can helpful for business to enhance their profitability	.000 <sup>a</sup>	4	1.000	Accepted
The RPA will increase the efficiency and effectiveness of the employees	.000 <sup>a</sup>	4	1.000	Accepted
The service sector must have knowledge about the factor affecting RPA	.600 <sup>b</sup>	3	.896	Accepted
Proper training programmes should be arranged for updating of the knowledge on RPA in service sector	.000 <sup>a</sup>	4	1.000	Accepted
The service sector is aware about the risk associated in the adoption of RPA	.000 <sup>a</sup>	4	1.000	Accepted
RPA allows management to evaluate to performance of employees at their workplace	.000 <sup>a</sup>	4	1.000	Accepted

It is clear from the above table that all the factors related to awareness are associated i.e. the p values are more than 0.05 hence, H<sub>0</sub> is accepted. It can be said that the awareness about the robotic accounting in service sector is adequate and it need to adopt by all the sector.

## Conclusion

The application and use of RPA are gaining pace across the business fields and processes. In some businesses there has been tremendous development of automated processes such as retail and banking whereas, in some businesses such as healthcare, education etc the pace of technological implementation has been very slow. The major reason for such uneven distribution of the technology is lack of knowledge and research on the subject and the existing of research does not address the limitations and difficulties in developments of algorithms in accounting field. The recent times have seen a digital revolution and government in India also supporting digital payments and start-ups in the field of banking and finance and development of AI based applications which has boosted the implementation of RPA across all the business sectors. However, there is a lot of ground which is required to cover and motivate the businessmen's, consumers and government about the implementation of RPA for their growth and customer satisfaction.

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