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A Study on AI Based ERP Solution

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Abstract— This paper provides how AI can be useful for managing when it's integrated with enterprise resource planning. Business leaders around the world express equal amounts of excitement and urgency for implementing artificial intelligence. In this application of AI on ERP solutions, comparison of applications are studied.

Index Terms— Enterprise Resource Planning[ERP], Artificial Intelligence[AI], Supply chain management, Chatbot, Warehouse Management, Risk management, Business process

I. INTRODUCTION

1.1 ERP (ENTERPRISE RESOURCE PLANNING)

ERP is a procedure that is used by companies to control and combine different parts of the business activities. ERP relates to a type of software that organizations apply to manage day to day business such as Project scheduling, Warehouse Management, Marketing, Advanced Analytics, Project Scheduling, Accounting, Risk Management and Supply chain management.

1.2 AI (ARTIFICIAL INTELLIGENCE)

AI is the competence of computers or robots to accomplish works that are done by humans because they require intelligence and discernment. AI can also be defined as application software that does not require humans to complete the required task. AI comprises different or various fields like speech recognition, object, image recognition, and natural language processing.

1.3 AI IN ERP

AI technology is growing rapidly. The usage of AI tools are also increasing to integrate in enterprise software. In ERP, AI machines are picking on work that uses human intelligence for completing the work.

ERP systems control various activities like creation, processing, reporting. AI is being used to boost all the enterprise and data processing activities.

As business organizations have huge data they become more complicated making erp software insufficient. Therefore, AI enabled ERP solutions can help in business streamline, complex ERP processes with many applications such as conversational AI systems and machine level models.

II. RELATED WORKS

[1] Digital Assistance (Thang et al.. , 2007)

This paper is based on how AI, ERP, and DA are merged and how this integration is useful for managers. The aim of AI is to make the software work as human intelligence and provide an analysis of how human brain works. Chatbots are example of AI that is used to grasp customer issue and provide efficient service. The use of chatbots has been increasing by many organizations because they save time and improve customer service. ERP is a huge collection of data about organizations. It has a disadvantage of analyzing the huge data and provide decision-making. Therefore, the need for AI in ERP has also increased. Due to the limited time period this paper was based on purely qualitative research. The disadvantage of using only qualitative research lacks statistics. Example of a chatbot in erp is a student management system using chatbot and rpa technology.

This paper sums up that applying AI and chatbot in ERP helps managers to provide better outcomes. AI saves time for managers by completing the administrative work Managers try to aim on activities like decision making in which a computer does not make. They can focus on different collaborations or strategies for a better working of a company. ERP has many modules which makes it difficult for humans to complete the work in a short period of time. Different companies have different erp system when manager shifts from one company to another they require a training about the working of the erp. However data assistance is raising the experience into the next level without physical interaction between the user and computer to complete the work.

[2] Risk Management (Mathara Arachci)

This paper contains the risk involved in ERP systems. Risk management in ERP consists of three main steps that are identifying, evaluating and controlling the risks involved. The important members related in this ERP system are managers, employers, developers, vendors and other consultants, so it's mandatory for people to have a better understanding of ERP systems and suppose if any of them fail it leads to failure in ERP systems. ERP has many advantages in improving the management system and financial level, it sometimes becomes successful and sometimes unsuccessful so in order to reduce the level of

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risks involved they are first identified and then analyzed. Risk factors involved in ERP systems are of various types like People related risks, Process related risks, Technological risks, Implementation risks, Operation and maintenance risks and ERP security risks. Hence this paper is concluded by identifying various types of risk factors involved in ERP systems and shows how the risk factors are categorized.

[3] Supply Chain Management

The world has been changing towards digital futures over the decades. One of the most striking technologies is AI. This paper looks for the contributions of AI to supply chain management. In any organization

A supply chain is used for different process activities like flow of goods, services and form an initial stage that is product to the final stage computers. As technology is evolving the procedures of organizations transfers data and goods to the customer along the supply chain also changes constantly. ERP systems in business organizations control all the activities in supply chain such as purchasing, order, manufacture, quality control, shipping, finance that provide services. All these are consisting in the form of modules in ERP. AI is widespreadly used in forecasting, supply chain planning etc AI in supply chain management helps in resolving problems of choosing supplier, estimation, purchasing demands. AI generate opportunities that increases the planning of business process. When AI is accommodated with ERP it provides accurate results. AI in companies helps to resolve all tasks like reduce language barrier, supply risk, quality control and customer service.

The paper concludes that the faster the companies start implementing AI provides the better results.

[4] Warehouse management system

Warehouse management system [WMS] is a part of ERP system that manages whole big volume warehouses operations in a real time. This system is made to handle and store products. Warehouse management systems that have so many specific features. In that Automation of the inventory process is one of it.

WMS AND ERP INTEGRATION: WMS integrated with hardware: printers, labeling system and integrated with an ERP software. Sometimes software becomes a bit expensive to buy and involves more interface customisation expenses and also using another product [system] to link the system together would be going to a separate purchase. The ERP will help in a lot of business processes that contains supply chain, Warehouse management system and managing the warehouse. They interact with each other and that interaction brings the enterprise more and more benefits and profit.

[5] BUSINESS PROCESSES

ERP looks after the integration of business processes. The Business process that should contain activity that helps to complete a particular organizational target[goal]. Azevedo et al (2014) presents a case study of a group of Portuguese companies. Those companies may convey the competition of institutions in the usage of the ERP system in a friendly manner.

Cadersaib et al (2020) concentrate on analyzing the skills required to implement ERP in the projects based on the ERP application software skills.

ERP contains multiple field that includes account management, business processes and organization as a research are Schlichiter and Kraemmergaord 2010).

III. METHOD

Methodology is defined as the collection of different methods that are used to perform the desired goal. Methodology gives a detailed explanation of the methodologies, accuracy and ai techniques that are used. Each category in erp has different fields.

For eg:Supply Chain Management has different fields like marketing, production, logistics etc. So different fields uses different ai techniques like Artificial Neural Network, Genetic Algorithm, Modeling, Data mining etc.. All the methodology used in different categories are divided into stages based on different researches. Table 1 describes different methodologies used.

Digital Assistance - Identification describes The required data to be collected. And the analysis is done for better outcomes.

Risk Management - Descriptive approach To describe, explain, understand processes that already existed. Activities in which companies should engage.

SCM- Research process is divided into 5 different phases. Search, grouping the data, selection and evaluation, analysis and reporting the results.

Business Process- The methodology used Also has 3 steps that involves planning, execution and reporting. In conclusion, different categories have different methodologies that are used after different researches and articles.

IV. COMPARATIVE STUDY

This paper is the comparative study of ERP implement strategies. ‘Strategy’ is defined as a plan to attain a future goal.

Traditionally, grouping erp was based on companies where the implementation of strategies is done in one step or in a group.

They are

Big Bang - Where the implementation of erp is done in a single step at all sites.

Phased - Implementing different ERP modules in a systematic manner. Where the core modules are implemented followed by peripheral modules.

Parr and Shanks [16] disagree and provide a further classification of erp implementation into five different scopes

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that are used by organizations:Physical, BPR, Technical scope, module implementation and resource allocation.

These strategies help in the faster development of ERP. Implementing these strategies in ERP also improve customer satisfaction level and provide better outcomes.

Table:1

Categories	Methodologies Used
1. Digital Assistance	.)Identification .)Screening .)Eligibility
2. Risk Management	.)positive/descriptive .)normative/prescriptive
3. Supply Chain Management	.)Qualitative research .)pilot search
4. Business Process	.)Planning .)Execution .)Reporting

V. CONCLUSION

In conclusion, artificial intelligence is very helpful in ERP related problems. It finally makes the whole process efficient and easy to deal with. Use experience improves greatly with AI techniques. It increases business and also helps to increase the efficiency of the company.

ERP system with AI will be able to avoid wastage of resources and prevents shutdown as well.

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