Original Article

Effective Usage of Artificial Intelligence in Enterprise Resource Planning Applications

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Abstract *- An essential area of computer science called artificial intelligence is transitioning into a new industry. Understanding what artificial intelligence is and how it is incorporated into different business apps is crucial because the idea is broad and complicated. The primary objective of the paper is to investigate artificial intelligence and how enterprise resource planning utilizes it. The study of artificial intelligence, machine learning, deep learning, and neural networks is also covered in greater depth in this paper. This research examines various books and online pieces about artificial intelligence in ERP on the basis of extant literature. According to the research, the effect of AI is apparent as businesses achieve a new level of analysis efficiency in various ERP areas due to amazing advancements in AI, machine learning, and deep learning. In many areas of ERP, artificial intelligence is heavily utilized, particularly in customer support, predictive analysis, and sales projections.*

Keywords - Artificial Intelligence, Enterprise Resource Planning, Manufacturing, Inventory.

1. Introduction

Rapidly altering technologies have changed the world as a result of the current artificial intelligence, ideally for the benefit of humankind. AI is being used to handle many real-world issues, which is good for people. Examples include industrial machines, intelligent helpers, self-driving vehicles, cancer detection, and intelligent ERP. Today's AI apps are very focused on a small number of tasks, but these AI-driven tasks are changing many marketplaces and sectors. In the years to come, AI will continue to advance as a result of extensive study. A notion associated with human intellect is artificial intelligence (AI). Artificial intelligence (AI) is the ability of a computer to mimic human intellect and carry out tasks in the same way that humans do [1].

Artificial intelligence is a term used to describe a distinct, sophisticated software system that mimics some of the functions of the human brain. It can involve anything from decision-making and voice detection to artistic labor. For instance, AI gives every interaction a robot has with people a personal favor. The robot is aware of the user's question and sets off an exact response to recognize a different issue and give the appropriate answer. Numerous fields, including marketing, research, and the financial sector, are using AI extensively. It has a wide range of subfields of study that cover various ideas, approaches, and technologies [2].

There are numerous subfields of artificial intelligence, and each subsection has unique traits. The primary areas of

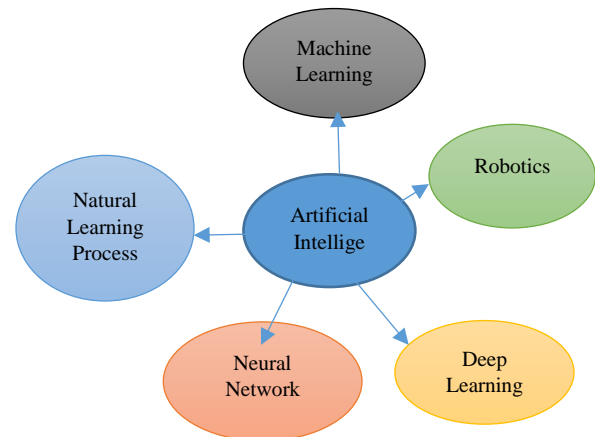AI are mentioned below, and they are constantly expanding. Figure 1 lists the various AI subfields.

Fig. 1 Subfields in AI

This research focuses on artificial intelligence and how it can help with enterprise resource planning issues (ERP). A program known as ERP is used to handle intricate business processes like finance, production, bookkeeping, human resources, and supply networks. By consolidating essential business processes onto a single platform, ERP increases company productivity, profitability, and manageability. ERP will become more flexible and straightforward with the use of AI, and self-learning future forecasts will be possible [3]. Numerous ERP vendors, including SAP and Oracle, are creating more AI apps. The apps are simple to incorporate

into the ERP system and have the ability to increase the accuracy of various metrics compared to human beings.

Nowadays, AI is widely used, and it is constantly evolving. It is beneficial to create intelligent software that functions and thinks like people. For both big and tiny companies, AI allows contemporary and intelligent solutions [4]. The use of the word 'business' in this context refers to a variety of businesses, including those that provide services to other businesses. The main objective of the thesis is to discuss how ERP affects company profitability and how AI and ML have an effect on ERP. The subject is crucial because AI is bringing about radical changes in a variety of industries, including ERP.

2. Literature Survey

The foundation of Digital Assistance [5] is the merger of AI, ERP, and DA and how managers can benefit from this union. The goal of AI is to simulate human intellect in software and analyze how the human brain functions. AI is used, for instance, in chatbots to understand client issues and offer effective support. Many businesses are using robots more frequently because they increase client satisfaction and save time. ERP is a sizable database of information about businesses. Its inability to analyze vast amounts of data and provide decision-making is a drawback. As a result, ERP now has a greater need for AI [6].

This study only used qualitative research because of the short time frame. Lack of data is a drawback of using only anecdotal study. A pupil administration system that uses chatbot and RPA technology is an example of a chatbot in an ERP. This study concludes that integrating chatbots and AI into ERP enables managers to produce improved results. Managers save time by having AI handle the routine tasks. Managers attempt to focus on tasks like decision-making that a machine cannot perform. They can concentrate on various partnerships or business improvement techniques. ERP has numerous components, which makes it challenging for people to finish the job quickly. Every business uses a distinct ERP system, so when a boss transfers from one company to another, they need to be trained on how it operates. Data help, on the other hand, is elevating the experience to the next level without requiring direct user-computer contact to finish the task.

The risk associated with ERP systems is described in [7], Identification, assessment, and control of the risks are the three major components of ERP risk management. Managers, employees, coders, suppliers, and other experts are significant stakeholders in this ERP system, so it's imperative that people have a better grasp of ERP systems and assume that if any of them fails, it will result in failure of ERP systems. Although ERP has many benefits for enhancing the management system and financial level, it can also have negative effects, so in order to lower the level of risks

involved, the risks are first recognized and then evaluated. threats linked to people, processes, technology, implementation, operation, and upkeep, as well as ERP security threats, are some of the risk elements that ERP systems are subject to. As a result, the paper's conclusion lists the different categories of risk factors related to ERP systems and demonstrates how they are organized.

In [8] Over the years, the world has been shifting toward digital possibilities. AI is one of the most impressive tools. This study explores how AI can improve supply chain management. A supply chain is used in any company for various process tasks like the movement of products and services from the beginning stage, which is a product, to the end stage, computers. The processes by which companies transmit data and products to customers along the supply chain change continuously as technology advances. ERP systems in commercial companies manage all service-providing activities along the supply chain, including ordering, manufacturing, delivery, and quality control.

All of these are comprised in the shape of ERP components. AI is widely utilized in predicting, supply chain management, and other fields. AI in supply chain management aids in the resolution of issues with source selection, assessment, and buying requirements. AI creates possibilities that improve business process planning. When AI is integrated with ERP, the outcomes are precise. AI in businesses helps to settle all duties, such as lowering supplier risk, customer support, and quality control barriers. The study comes to the conclusion that quicker company adoption of AI yields better outcomes.

A real-time ERP system in [9] controls all large volume storage activities. Products are handled and stored using this tool for managing warehouses with so many unique characteristics. One of them is the automation of the stocking procedure. ERP INTEGRATION WITH WMS: WMS has been combined with various pieces of gear, including printers, a marking system, and ERP software. Software can occasionally be a bit pricey to acquire, necessitate more interface customization costs, and require the use of a distinct product (or system) to connect the systems together. The supply chain, the warehouse management system, and warehouse management are just a few of the business operations that the ERP will aid. They engage with one another, and this contact helps the business gain ever-increasing advantages and profits.

In [10] ERP handles the fusion of company procedures. The business procedure should include actions that aid in achieving a specific corporate objective [goal]. A case study of a collection of Portuguese businesses is presented. These businesses may politely discuss the rivalry between organizations when using the ERP system. According to the ERP application software skills, focus on evaluating the

skills needed to apply ERP in the tasks. ERP encompasses a number of fields, including account administration, business procedures, and structure.

3. Enterprise Resource Planning (ERP)

A brand-new piece of software named Enterprise Resource Planning (ERP) appeared in the 1990s. This brand-new software system was a cutting-edge innovation that differed significantly from traditional IT systems. Regardless of the sort of company, the ERP system was created to incorporate all of its key components. In other words, ERP systems were seen as means by which businesses could arrive at a situation in which all employees and customers could see what everyone else was doing across the globe in the company. ERP is a methodical approach to constantly managing and improving a company's resource allocation. A company can accomplish outstanding outcomes in expansion, revenue, and the creation of new products and services when ERP systems are used properly. The component nature of ERP systems makes them adaptable and capable of being customized to provide the best business practices [11].

The components can be combined to create a comprehensive ERP system or can operate independently in real-time. ERP systems seek to combine systems across an organization's entire business as well as its divisions. Thus, ERP systems have benefits and drawbacks when applied in a company. First and foremost, ERP systems can serve as a trustworthy source of information, improve information administration, control, and output, and boost speed and decision-making. However, adopting ERP systems could be very time-consuming for businesses, particularly start-ups. Enterprise resource planning (ERP) systems have features and modules that can be difficult for businesses to comprehend and use. In this regard, ERP systems struggle with issues like compatibility with the advancement of hardware and software, integration, and the development of the data between the modules.

In ERP, there are various categories for each group. For instance, supply chain management encompasses a variety of disciplines, including marketing, manufacturing, transportation, etc. Therefore, various AI methods, such as Artificial Neural Networks, Genetic Algorithms, Modeling, Data Mining, etc., are used in various areas. Based on various studies, all methodologies used across various groups have been split into phases. The various methods are described below.

Categories Methodologies Used

Digital Assistance: Identification, Screening, Eligibility

Risk Management: positive/descriptive, normative/prescriptive.

Supply Chain Management: Qualitative research, pilot search.

Business Process: Planning, Execution, Reporting

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 research and articles.

The radically shifting business climate is one of the biggest obstacles that ERP systems must overcome. With growing client standards, business demands, and competitive pressure as a result of the market's expansion, businesses are constantly under strain to cut expenses overall and complete particular tasks faster. In order to meet the demands of business changes and to help businesses adjust more quickly to changes in the business world, ERP providers are constantly enhancing and developing their ERP systems. Due to their reporting capabilities, ERP systems once served as a useful tool for the work setting, but today's C-level leaders and decision-makers require more Business Intelligence (BI) competent tools. They can aid them in making better choices by helping them analyze the vast amounts of data that ERP systems are able to gather [19].

The decision-makers' desired AI instrument was still absent at that time. Machine or program intelligence is referred to as AI. The purpose of artificial intelligence study is to develop a thinking machine that can learn from its environment and make decisions independently. With the goal of mimicking the human brain, artificial intelligence develops software that can think critically, perceive its environment, and act accordingly.

4. AI in ERP Applications

The use of AI is increasing company output and efficiency. The many ERP applications that make use of AI are outlined in Figure 3.
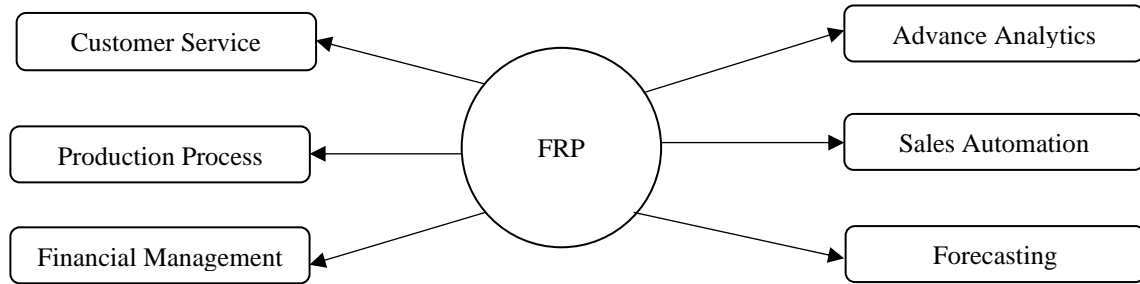
Fig. 2 ERP Tools

4.1. Customer Service

The purpose of artificial intelligence is to mimic the human brain's performance in computer programs and to explore the brain's capabilities in great detail. For instance, a chatbot is only one of the many digital help applications that are widely used for a wide range of reasons, from business to entertainment to commerce. Artificial intelligence is garnering a lot of attention since it can save a lot of time in customer support. The use of natural languages in its operation enables it to be categorized as an interaction between human users and software.

On the other hand, an enterprise resource planning (ERP) system is a computer program that enables a company to see all aspects of the business at the same time. The Enterprise Resource Planning (ERP) system may gather a broad variety of data about the firm. However, in its earlier versions, it was unable to do an analysis of the data in order to provide the decision-making process with more helpful assistance and insights. Therefore, the demand for artificial intelligence to be integrated into enterprise resource planning (ERP) systems is growing since doing so has the potential to improve the functioning of ERP systems by making them better at analyzing data and coming up with judgments, actions, and recommendations. The addition of value that can be made to the product or service that ERP systems provide overall. Nevertheless, providing an assessment of the technology's limits as well as potential areas of development and suggestions for future study is essential and will result in improved performance [13].

According to the findings, incorporating AI and chatbots into ERP systems will assist managers in delivering results that are both more effective and more efficient. In addition, one of the outcomes is the automation of mundane administrative and coordinating activities, which allows for more efficient use of available time. Artificial intelligence frees up managers' time so they may focus on other aspects of administration. Managers are able to spend more time on other tasks, such as problem solving, collaborating, establishing strategies, producing innovations, developing people, and connecting with stakeholders, all of which are activities that a machine by itself is unable to perform. ERP systems that integrate AI and Chatbots provide managers with this opportunity. When artificial intelligence (AI) and chatbots are incorporated into enterprise resource planning

(ERP) systems, managers have a lot more time on their hands, allowing them to be more productive in administrative tasks and to concentrate more on making decisions. A further advantage of integration is that artificial intelligence and chatbots will enhance the ERP system and make it simpler to control the system's design and usability.

ERP software often has an excessive number of features and modules, which may make it challenging for users to interact with and operate the software. In many different contexts, a lack of proficiency in using an ERP system is a barrier that restricts access to relevant data. A lack of standardization and the presence of several big providers characterize the ERP industry. To put it another way, when a manager who is acquainted with the SAP ERP system transfers to another firm that utilizes the Oracle ERP system, the management needs to undergo some training before they are able to use the system to its full potential. The learning curve differs from system to system when it comes to ERP programs. Nevertheless, in order to take full advantage of the ERP system, it is a step that must first be taken.

The incorporation of chatbots and AI into ERP systems, on the other hand, will make the contact with the ERP system seem more natural and lessen the detrimental impacts of the learning curve. The capacity to acquire new information over time and make recommendations for choices and actions based on that knowledge is one of the most important aspects of artificial intelligence (AI). During the process of analysis and decision making, managers will behave more naturally while communicating with the chatbot since their understanding will be interpreted via a Natural Language Programming (NLP) interface that has been fine-tuned. As a result, they will be able to devote more of their attention to analyzing the data rather than being distracted by the question of how to get the data from the ERP system.

4.2. Sales Automation

These days, AI is seeing widespread use throughout sales and marketing, particularly in ERP. An ERP system that is empowered with AI is able to analyze market and consumer behavior and automatically make market strategy decisions. There are two distinct categories of enterprise resource planning (ERP) systems: broad AI and narrow AI. The notion of general artificial intelligence (AI) refers to a computer that has the capacity to learn and can-do complex

tasks in the same way as the human brain can. Narrow AI, on the other hand, is utilized to carry out activities that are solitary and straightforward. Sales automation leverages narrow AI. Every company must deal with the challenge of managing their sales at some point, and AI has the potential to excel in this arena. An employee in sales has a difficult job since there are a lot of duties to do that take a lot of time and are complicated. For instance, predictive analytics is quite important for the sales department. It is possible to include AI into the ERP system so that the analytics run more quickly and without any hiccups. It will identify potential sales possibilities, provide an automated price analysis, and make certain that the return on investment is maximized. Artificial intelligence is being integrated into the operations of a number of large firms, including Zalando. Not only business-to-consumer (B2C) enterprises are engaging in this practice, but also business-to-business (B2B) companies, who have already integrated AI in their ERP [14].

4.3. Inventory Management

The term "inventory" refers to the stock of various items, such as raw materials. Not only are raw materials included in this category, but also things like software. The term "inventory management" refers to the process of planning, arranging, managing, and keeping a suitable inventory level in a manner that minimizes costs in order to satisfy the demand of customers. The entire current assets of a company are made up of 50–80 percentage points of the organization's inventory. Working in production management and capital management both need you to do this. It is an integral aspect of the job. A manufacturer may incur a significant amount of additional expenses due to inefficient inventory management. Manufacturers are able to manage their order records and add or remove new inventory by using tools powered by AI.

In this context, machine learning plays an essential role, and it has the ability to manage inventories in accordance with demand and supply. By analyzing past procurement data and relevant procurement analysis, as well as current consumption analysis, via model deduction, artificial intelligence (AI) provides manufacturers with the optimum timing and amount of raw material procurement. This enables manufacturers to keep the optimal inventory necessary for production, which in turn ensures that the ideal inventory can be maintained. The management of inventory is a crucial component of the company, and it requires a significant amount of manpower. In this context, the use of AI will make the procedure both quicker and more precise. As can be shown in the following examples, several applications of AI are possible.

4.4. Manufacturing

Through large-scale data analysis, AI can not only increase the efficiency and accuracy of manufacturing product design, but also dramatically speed up product design iteration, research, and development. This is because AI can efficiently integrate a vast volume of user data, correctly understand customer preferences and demand, and offer data assistance for business R&D. The digital prototype and virtual simulation, which are both part of the product design enabling platform, round out the full production design process. This is made possible by the characteristics of digital twins, which include simulation analysis, document production, industrial design, visual rendering, and so on, all of which have the potential to improve the efficiency with which designers create designs.

It is possible to perform simulation studies and tests with repeatable and changeable parameters by using virtual models. Verifying the performance and performance of products in different external environments can increase the accuracy and reliability of research and development, shorter the method of research and development, significantly reduce the cost of product development and research and, through experimentation, effectively connect the individualized needs of customers and the shifting market environment. At this point, the Digital Twin has been used in the production of airplanes, the research and development of new drugs, and other sectors that have lengthy design cycles and significant challenges throughout the development process [15].

4.5. Inventory Monitoring Automation

Employees have a difficult time as well as a time-consuming process that is manual inventory tracking. The use of automation has the potential to be successful in this arena. Inventory management that is powered by AI has the ability to do this activity in real time while reducing the number of mistakes that occur, freeing up staff members to focus on other projects.

4.6. Robot Automation

Inventory management, inventory verification, and stocking might all benefit from the usage of artificial intelligence. The underlying algorithm gives the machine orders to carry out a variety of different jobs. It has already attained a high level of popularity and is used extensively in inventory management. The potential of robotic process automation, also known as RPA, is enormous and continues to expand. When combined with other cutting-edge technologies, like artificial intelligence (AI) or machine learning (ML), this potential becomes almost limitless. These sophisticated and intelligent bots, when used in conjunction with one another, are capable of imitating any human interaction and may be used in any field or business. Machine learning is the process of teaching robots how to deal with data in a more effective manner by simulating the learning notion of rational people. This process is called "machine learning."

On the flip side, if these bots are equipped with artificial intelligence or AI services (or methodologies), they are able

to mimic human traits and arrive at accurate conclusions about the activity at hand. Together, ML and AI services allow bots, chatbots, and sophisticated computers the capacity to not only comprehend issues but also to use solutions such as application interconnectivity, predictive analysis, and big data to address these challenges [20]. This is made possible by the combination of the two technologies. In addition to this, it gives artificial intelligence robots the credibility necessary to investigate and extract information in order to categorize, associate, optimize, group, and recognize patterns, among other things. Intelligent automation is continuously expanding its digitalization capabilities, which is not surprising considering the potential applications of AI. As a result, it becomes more applicable and resourceful across a variety of different industrial fields.

4.7. Intelligent Quality Assessment

The use of edge computing and AI technologies helps to minimize the number of process errors that are found in manufactured goods. Combining AI technology with processing and manufacturing technologies is what artificial intelligence (AI) and machine learning do. This combination ushers in dramatic changes to the way manufacturing activities are carried out. For instance, AI may detect relatively small flaws in a piece of machinery or a product, giving designers the opportunity to select how best to address the issue before it escalates into a big mistake. Due to the close proximity of edge computing and AI technology, data can be processed at the site where data is generated, allowing for immediate action based on insights, lowering the likelihood of manufacturing defects, increasing worker safety, and implementing production monitoring, all while saving businesses a ton of money and significantly increasing efficiency.

AI contributes to an improvement in the overall quality and performance of the product that is produced. There are a lot of organizations that manufacture things, and many of them employ automation powered by AI and strong tools to find flaws in the process or the primary factors that contribute to flaws in product design. By using AI to do thorough quality testing, manufacturers can ensure that high-quality, batch-produced goods have a quicker time to market [17]. Companies may then tailor production to satisfy this growing need in the market.

4.8. Data Mining

The mining of data and the use of data are both very critical components of a successful company. For effective data analysis, a corporation has to staff up with a sufficient number of data analysts. On the other hand, when AI is used to drive implementation, each and every record of a customer is automatically recorded and analyzed. When seen as a whole, it is a lot simpler for a business to plan its production and sales. They also have the opportunity to enhance their company model depending on the results of the investigation.

4.9. Less Error in Forecasting

The process of forecasting is highly essential in business, and it has a significant bearing on the management of supply chains. In order to increase both customer happiness and profit margin, a firm has to be aware of the quantities of items they have in sufficient stock as well as the quality of those products. Artificial intelligence prediction models have the potential to deliver revolutionary big data tools for businesses that are a part of the commodity supply chain. These technologies can assist these businesses in mitigating the risk of swings in commodity prices and improving their profitability.

Firms in the industrial manufacturing sector that are highly susceptible to fluctuations in commodity prices may benefit from the knowledge base that can be offered by AI technology's ability to predict the future price trend of raw materials. These enterprises can then use this knowledge as the foundation for formulating hedging strategies. Some raw commodities that are subject to significant price shifts on the market may be able to reduce the negative effect of such shifts on their company's earnings via the use of hedging and futures trading if the stability of hedging is improved.

With this big data tool, businesses will have access to accurate price forecasts based on a wide range of market data that has been collected, analyzed, and interpreted in a manner that allows for the prediction model to maintain its accuracy. Analysis of past sales and stock levels can be performed by AI without the possibility of inaccuracy [18].

4.10. Financial Management

ERP places a lot of emphasis on financial management, and AI is often used here. This task can be completed more quickly and accurately by AI. Being a centralized system, ERP allows for the atomic creation of invoices as well as their sending and payment. Additionally, it has the capacity to automatically conclude certain financial activities of a business both monthly and annually. AI may acquire human behavioral patterns and make decisions that are superior to those of humans by using machine learning more and more in this area. Manual accounting procedures are susceptible to common human mistakes.

Contrary to human-led methods, AI can make accounting quicker and with fewer mistakes. ERP powered by AI can process invoices, pay bills, and enter predictable data more accurately than a human procedure. When AI is used to aid with data entry, paying an invoice, or preparing invoices, personnel in finance departments are freed up to focus on other lucrative aspects of the company's finances. Additionally, it is advantageous for leaders in company in a variety of different ways. They are free to focus their attention on making marketing and sales choices utilizing AI to do predictive analyses.

4.11. Advance Analytics

Different industries are being empowered by ERP, which is growing more and more sophisticated every day. ERP analysis and prediction are crucial in production and supply chain management. Numerous benefits may result from accurate analysis and projections, and AI can significantly enhance these processes. "AI analytics" is a subfield of BI that uses machine learning techniques to discover hidden insights in data and uncover previously unseen relationships. Many of a data analyst's regular responsibilities may be performed automatically by using AI analytics. The goal of using AI for analytics is not to replace analysts, but rather to improve existing abilities in terms of speed, data volume, and detail tracking.

5. Conclusion

Artificial intelligence is employed extensively in many areas of ERP, and it has a beneficial influence on the bottom line. It allows businesses to improve their ERP system with the use of machine learning and NLP. There is no denying the fact that modern AI has a major impact on people's lives. People use AI in daily living without even realizing it when using various apps. Not only does ERP use AI in their program, but other business sectors also use it successfully. Artificial intelligence is being used to track consumer behavior, analyze various client encounters on online shopping sites, and generate automated feedback. In conclusion, AI innovation is significant and has far-reaching consequences for the ERP market. There is a lack of options for ERP software that utilizes artificial intelligence. However, there is a significant quantity of fresh study being done in this area today. Predictive analysis, Revenue projections, and learning more about AI and its components have been the primary focus of this research. In later study, the author will focus on other topics like business intelligence and Natural language processing.

References

[1] Rui Lin, "Analysis on the Application of Artificial Intelligence in the Global Value Chain Upgrade of Manufacturing Enterprises," *2021 3rd International Conference on Artificial Intelligence and Advanced Manufacture*, pp. 1400-1404, 2021. [CrossRef] [Google Scholar] [Publisher link]

[2] D. Srinivasan, Ruey Long Cheu, and Chuan Wei Tan, "Development of an Improved ERP System using GPS and AI Techniques," *Proceedings of the 2003 IEEE International Conference on Intelligent Transportation Systems*, 2004. [CrossRef] [Google Scholar] [Publisher link]

[3] Jorge Ribeiro et al., "Robotic Process Automation and Artificial Intelligence in Industry 4.0–a Literature Review," *Procedia Computer Science*, vol. 181, pp. 51-58, 2021. [CrossRef] [Google Scholar] [Publisher link]

[4] Marinos Themistocleous, Zahir Irani, and Robert M. O'Keefe, "ERP and Application Integration: Exploratory Survey," *Business Process Management Journal*, vol. 7, no. 3, pp. 195-204, 2001. [CrossRef] [Google Scholar] [Publisher link]

[5] Jacob Bergdahl, "The AI Revolution: A Study on the Present and Future Application and Value of AI in the Context of ERP Systems,"

[6] Oumaima El Hairech, and Abdelouahid Lyhyaoui, "The New Generation of ERP in the Era of Artificial Intelligence and Industry 4.0," *Advanced Intelligent Systems for Sustainable Development (AI2SD'2020)*, pp. 1086-1094, 2022. [CrossRef] [Google Scholar] [Publisher link]

[7] Teodora Ivanović, and Mirjana Marić, "Application of Modern Enterprise Resource Planning (ERP) Systems in the Era of Digital Transformation," *Strategic Management*, vol. 26, no. 4, pp. 28-36, 2021. [CrossRef] [Google Scholar] [Publisher link]

[8] Izabela Rojek, and Mieczyslaw Jagodziński, "Hybrid Artificial Intelligence System in Constraint based Scheduling of Integrated Manufacturing ERP Systems," *Hybrid Artificial Intelligent Systems*, pp. 229-240, 2012. [CrossRef] [Google Scholar] [Publisher link]

[9] Petya Biolcheva, and Migiena Molhova, "Integration of AI Supported Risk Management in ERP Implementation," *Computer and Information Science*, vol. 15, no. 3, 2022. [CrossRef] [Google Scholar] [Publisher link]

[10] Jianyu Fu, Tetsuki Taniguchi, and Yoshio Karasawa, "The Largest Eigenvalue Characteristics for MIMO Channel with Spatial Correlation," *Electronics and Communications in Japan (Part I: Communications)*, vol. 87, no. 12, pp. 18-27, 2004. [CrossRef] [Google Scholar] [Publisher link]

[11] Peter Dauvergne, "Is Artificial Intelligence Greening Global Supply Chains? Exposing the Political Economy of Environmental Costs," *Review of International Political Economy*, vol. 29, no. 3, pp. 696-718, 2022. [CrossRef] [Google Scholar] [Publisher link]

[12] V.V. Narendra Kumar, and T. Satish Kumar, "Smarter Artificial Intelligence with Deep Learning," *SSRG International Journal of Computer Science and Engineering*, vol. 5, no. 6, pp. 10-16, 2018. [CrossRef] [Google Scholar] [Publisher link]

[13] C. Sneha et al., Global Journal of Engineering Science and Researches.

[14] Samantha Mathara Arachchi, Siong Choy Chong, and A. D. S. M. Lakshanthi, "Literature Based Review–Risks in ERP Systems Including Asian Countries," *European Journal of Computer Science and Information Technology*, vol. 3, no. 1, pp. 1-14, 2015. [Google Scholar] [Publisher link]

[15] A.J. Tallón-Ballesteros, "The Design of ERP Intelligent Sales Management System," *Fuzzy Systems and Data Mining VI*, 2020. [CrossRef] [Google Scholar]

[16] Jigar K Patel, "Critical Success Factors for Implementation of Enterprise Resource Planning Software," *SSRG International Journal of Computer Science and Engineering*, vol. 8, no. 2, pp. 1-5, 2021. [CrossRef] [Publisher link]

[17] Zhengzhong Shi, and Gang Wang, "Integration of Big-data ERP and Business Analytics (BA)," *The Journal of High Technology Management Research*, vol. 29, no. 2, pp. 141-150, 2018. [CrossRef] [Google Scholar] [Publisher link]

[18] Cemal Aktürk, "Artificial Intelligence in Enterprise Resource Planning Systems: A Bibliometric Study," *Journal of International Logistics and Trade*, vol. 19, no. 2, pp. 69-82, 2021. [CrossRef] [Google Scholar] [Publisher link]

[19] Vegard Kolbjørnsrud, Richard Amico, and Robert J. Thomas, "How Artificial Intelligence will Redefine Management," *Harvard Business Review*, vol. 2, no. 1, pp. 3-10.

[20] Shrutika Mishra, and A.R. Tripathi, "AI Business Model: An Integrative Business Approach," *Journal of Innovation and Entrepreneurship*, vol. 10, 2021. [CrossRef] [Google Scholar] [Publisher link]