

Integration of AI-powered predictive Analytics in S/4 HANA FICO for Pharmaceutical Financial Planning

Author Name- **Puneet Agrawal**

Title - Director, ERP

Affiliation- West Pharmaceutical Services Inc.

Location- Exton, PA, USA

Email- puneetagrwal1983@gmail.com

Abstract: The research has focussed on the impact of transformation by incorporating AI in different financial services of pharmacy, towards giving a major focus on innovative approaches, meeting the customer demand as per their health concern. Secondary qualitative and quantitative data have been collected for analysing and exploring the study. Different sets of data reveal the optimisation of AI by increasing their source of profit and providing personalised solutions. The findings of the study show an investment of \$35 billion for incorporating AI in designing drugs and highlighting the overall potential and challenges respectively. The recommendation has highlighted the ethical aspects of AI implementation, regulatory compliance, and other collaboration globally.

Key Word: Artificial Intelligence (AI), automation, Machine learning (ML), S/4 HANA FICO, pharmacy, algorithm, profitability, financial operations, drug design, Return of Investment (ROI).

I. Introduction

A. Background of the Study

Financial planning and forecasting methods play a dynamic role in the pharmaceutical industry because of the high marginal cost of operations, rigid regulatory policies, and highly competitive environment. A tool widely used in planning industrial resources, and solutions for ERP systems by offering

excellent management of finances is “SAP S/4 HANA Finance (FICO)” [1]. The evolution and advent of automation like AI-powered tools for predictive analysis, forecasting, and others in “S/4 HANA FICO” hold generous and high potential towards making pharmacy firms increase their financial management accuracy, and streamline the process of budgeting and allocation of resources respectively [2].

B. Problem Statement

The traditional method of finances often depends on the historical or previous annual years' data or any further manual method resulting in a decrease in delay, errors, or other inefficiency in the system of operations. The volatility of the market in the pharmaceutical industry and the critical regulatory factors are the reason for limitations that affects the profitable measure, and competitiveness of the pharmaceutical company [3]. The highest need for using predictive analytical tools involves leveraging real data in the practical world and analysis of the algorithms of AI. Adoption of AI for the financial operations in pharmaceutical companies would help to provide better insights for more algorithms towards making the company take more strategic decisions and address risks in finance previously.

C. Objectives

The primary goals of this study are 1. To explore the capability of “AI-powered predictive analytics” in improving the

financial forecasts in pharmacy companies. 2. To address and identify the key functions of S/4 HANA FICO along with the support of integration of AI. 3. To evaluate the impact of AI on the optimisation of resources and management of costs in planning the pharmaceutical's finance planning. 4. To assess the limitations and the mitigations for implementing AI in "S/4 HANA FICO" in the pharmaceutical industry.

D. Significance and scope of the study

The key significance of the study is to mitigate the gap between the traditional way of financial practices to that of the modern solutions which are AI-driven, for giving valuable insight towards achieving a more flexible form of financial planning and management. This study has a scope to enhance the pharmaceutical industry to increase its efficiency in financial operations, meet regulatory standards, and make a profit by gaining a competitive advantage through implementation of AI tools.

II. Literature Review

A. AI evolution in Financial systems

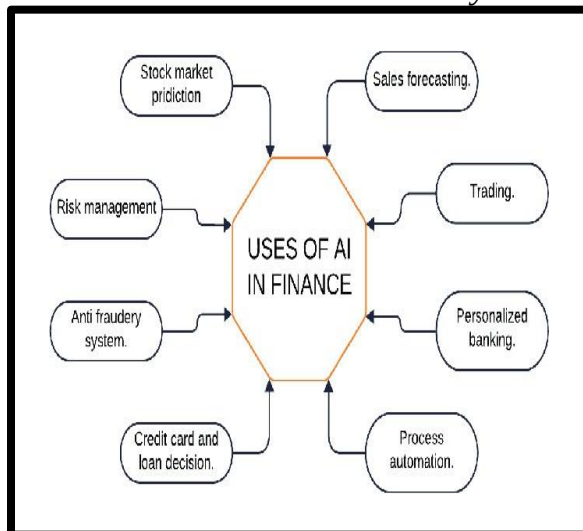


Figure 1: Uses of AI in Finance
[6]

The advent of AI has certainly shown the transformation of allowing automation, decision-making for financial operations, and others. In the initial aspect, the adoption of AI allows to focus on certain rules for the process of transaction and the detection of fraud [6]. The application of AI gives a clear pathway for tailoring a wide ecosystem for cryptocurrencies to safeguard financial operations from undergoing any fraud [4]. Similarly, AI is not only used for certain risk assessment detection but also for maintaining the regulatory standards towards customising the experience of customers [5]. However, machine learning algorithms help in analysing thousands of data in a second, giving a real-time analysis of the data for understanding patterns and investing in various opportunities for the assessment of risk factors [5]. Integration of AI in "enterprise resource planning ERP" for tools like "SAP S/4 HANA" has increased the planning of financial operations by optimising the cost and growing the industry in different sectors.

B. Use of AI in Predictive Analytics

The machine learning (ML) algorithm allows any financial operation to identify the stock patterns, current trends, and other accuracy in forecasting methods for planning finance, management of risk factors, and strategic decision-making. ML algorithms, neural networks, and big data analytics certainly assess a vast amount of data resulting in the foretelling of the fluctuations in the market, estimation of credit risk, and optimising the strategies for investment [7]. Various industries like the retail industry, use AI for predicting the needs of inventory, optimisation of the stock levels and thus decreasing the cost by improving customer satisfaction [8]. In a financial scenario like "S/4 HANA FICO", AI helps in increasing the budget, demand forecasts, and

optimisation of cost towards empowering the business operations for effectively managing the uncertainties. Automation helps financial operations by calculating complex scenarios, decreasing any further human error. In predictive analysis, certainly drives better efficiency and a more flexible form of strategic operation across various industries.

C. Barriers to adopting AI in financial planning

Despite having potential advantages, AI incorporation has certain challenges in the financial operations in strategic planning. Not being cost-effective, AI incorporation needs an advanced level of infrastructural development toward detecting the organisation's functions. The traditional system sometimes lacks compatibility with the AI tools, which results in integrational challenges and breaches to the quality of data [9]. There are various technology-related barriers like data security concerns and privacy of the data all these go to stake for the company once they have implemented AI tools in their financial operations [9]. Also, the adoption of AI certainly does not provide reliability in decision-making and lacks reliability in the dynamic environment of the organisation [10]. Besides all this, the adoption of AI also becomes critical when there is a lack of technical experts in a financial team. The complex operation of AI algorithms allows to build skepticism about the reliability in financial decision making showing a lack of adoption in pharmaceutical industries.

D. Case studies showing AI adoption in pharmaceutical companies

Case study 1: “Re-inventing Pharma with Artificial Intelligence at Pwc”

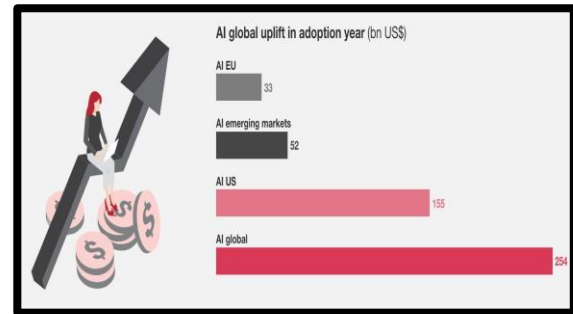


Figure 2: Enhancing profit by implementing AI in pharmacy company

Pwc

[11]

The case study shows the impact of incorporating artificial intelligence in revolutionising the operations in the pharmaceutical industry specifically for the R&D operations, commercial aspects, and others. The operations in pharma companies like Pwc show that using AI in pharmacy can certainly make the profit double by adding “\$254 billion” by the annual year 2030 [11]. However certain strategies like organising the delivery strategies, establishing innovative solutions for the incubators, and other impactful adoption through AI incorporation are evident [11]. The integration of AI in pharmacy companies certainly increases the competitive landscape and healthcare facilities of the company towards unlocking more potential for transformation.

Case Study 2: “Exscientia: a clinical pipeline for AI-designed drug candidates”



Figure 3: Exscientia using AI for revolutionising the new design of drug candidate

[12]

The case study shows an evidence of Exscientia of using AI in making new prove of design for the drug candidate. As per the funding done by “BBSRC”, the company had shown development in the “Centaur AI platform” enabling the molecules of drugs as per the patient needs through modern engineering [12]. Further innovation is driven through collaboration, and other designing of drug candidates for treating critical conditions like Cancer, and Alzheimer’s.

III. Methodology

E. A. Research Design

The particular study has adopted an explanatory research design for investigating the integration of AI in predictive analysis in “S/4 HANA FICO” for further financial methods of planning. This particular design has helped the study to drive in-depth analysis and give the impact of AI through more accuracy in forecasting methods, optimisation of resources, and another efficient form of decision-making strategically.

B. Data Collection Method

This particular study has adopted secondary data collection methods. Both qualitative data

from the case studies and quantitative data for the findings have been collected respectively. The qualitative analysis has been done for different academic journals, reports from the industry, case study analyses, and other online resources to have deeper insights into the application of AI towards financial planning and ERP system analysis. Besides different graphs, charts, and tables have been used in the study to provide insights for the quantitative analysis.

C. Metrics for Evaluation

Accuracy Improvement: This is a particular metric that helps to compare the accuracy of financial forecasts in both before and after conditions of the integration of AI. Analysis is made on the forecasts of AI implementation by assessing the extent of AI use in improving the forecast analysis of financial measures.

Efficiency in operation: The metrics of operational efficiency allow for measuring the time and cost of strategic financial planning. Certain metrics allow for decreasing the work hours spent for finding data collection, by reporting certain generations and reducing the manual forms of error towards lowering the cost of operation.

ROI: The return on Investment allows for assessing the comparison for finding the benefits financially towards enhancing the planning through AI in the financial aspect, like an improved form of efficient decision-making, savings of cost, and other revenue development showing the cost efficiency and impact of AI tools. An analysis of the cost-benefit allows in helping to quantify the profits of the pharmacy companies towards adopting the AI tools.

IV. Result and Findings

A. Data Presentation

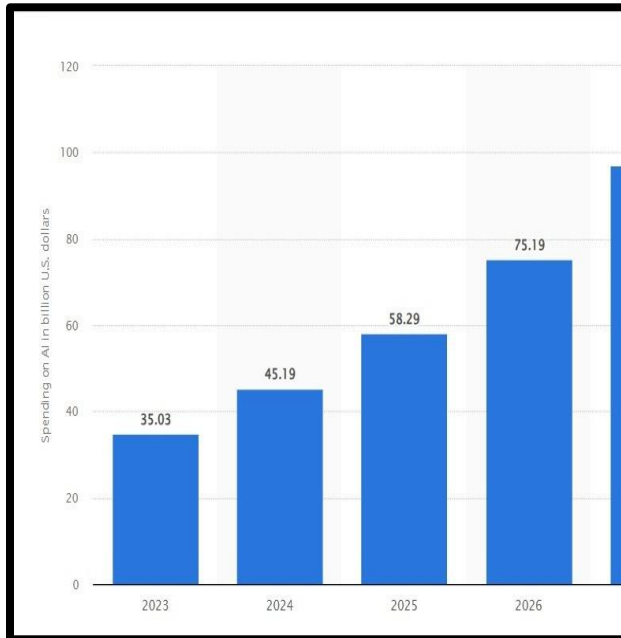


Figure 4: Industrial growth after using AI
[13]

Generative AI has certainly been less commonly implemented for the industry to take hold in various other years. In the year 2023, the industry of financial services allows investing “35 billion U.S dollars” in the implementation of AI in several banking industries showing an account of “21 billion US dollars” respectively [13]. The observation shows that the application of AI allows financial reporting for accounting for the optimisation of cloud pricing strategies. In the field of sales and marketing, the voice process, chatbots, and other conversational AI aspects help in increasing the interaction of customers through various forms of streamlining operations and better integration of services [13]. Also, there are certain challenges, related to AI implementation that allow the financial institute to get to the privacy concerns, posing a specific threat to the barriers and a flexible form of integration [13].

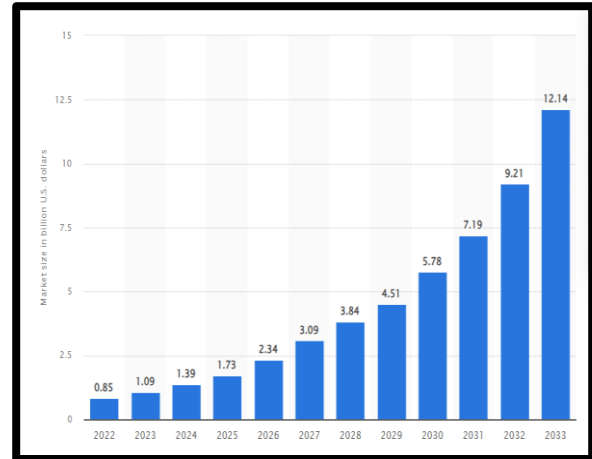


Figure 5: Market size of generative AI in financial services
[14]

The market size of generative AI in the financial system allows providing growth towards indicating an upsurge from “1.09 billion US dollars” in the annual year 2023, to “12 billion US dollars 2033” as shown in figure 4 respectively [14]. This forms a remarkable growth showing the compounding of the annual growth rate by enhancing the significance of AI tools in the financial sector.

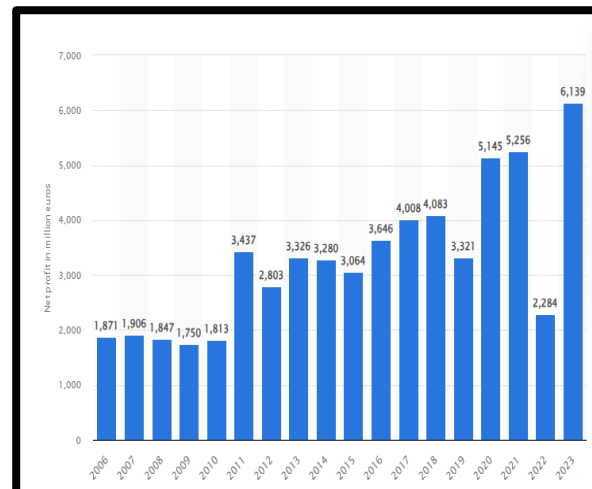


Figure 6: SAP's net profit from 2006 to 2023
[15]

In the year 2023, the attribution of profit-making from SAP allowed the pharmacy

company to make “1.8 billion Euros” to “six billion euros”, which was the highest form of net profit that has been generated from the past records as shown in figure 5 [15].

B. Key Findings

As per the above results, it was prominent that financial services in 2023, allowed significant investment for AI with around “\$35 billion investment” [13]. This helps in giving support to the role of AI in improving the financial metrics of analysis by optimism the strategies for cloud pricing system. In the field of sales and marketing sector, AI tools for instance, chatbots, allow in increasing the interaction with customers towards streamlining the operation. The predictive market for generative AI allows financial services to show a growth of “\$1.09 billion in 2023” to “\$12 billion by 2033” respectively [14]. The SAP profit as per the reports found from 2023 shows a hike of S/4 Hana FICO and its profitable measures towards reaching up to “6 billion Euro” showing the benefit of financial operations for integration of AI in the pharmacy industry.

C. Case study Outcomes

Case Study	Key Findings	Impact
Re-inventing Pharma with AI (PwC)	AI in pharma can add \$254 billion by 2030, enhancing R&D, commercial operations, and competitive advantage.	Increased profitability, improved healthcare services, and transformation potential.
Exscientia	AI aids in	Faster drug

: AI-designed Drug Pipeline	the design of personalised drug molecules, targeting conditions like Cancer and Alzheimer's .	development and personalised treatment solutions, improving patient care.
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Table 1: Outcomes of Case Study (Self-Developed)

The above table 1 shows the outcomes of case studies as discussed in the previous sections.

D. Comparative Analysis of Literature Review

Int ext	Finding s	Focus	Gaps	Soluti ons
[4]	Positive results of the implementation of AI in the financial system.	Implementa-tion of AI in trading, fraud detectio-n, economi-c trends, globalis-ation	Used secon-dary sourc-es of data to interper-et and analy-se.	The study could have been more eviden-tial if primar-y data had been used [21].
[5]	The landscap-e of AI in finance allows for regulato	The focus was on various financial institutio-n to analyse	Only FinTe-ch indus-tries have been focus	The study could have used some other industr

	ry compliance, risk mitigation, and personalised customer experience aligning to various theories.	the impact of AI in decision-making.	sed on.	y to show the comparison.
[6]	Primary findings show the distribution of AI in business outcomes	The focus was to analyse primary research and provide possible hypotheses for AI awareness in banking sectors.	No thematic analysis	The thematic analysis would have provided historical data for better analysis [22].
[7]	The study highlights the obstacles to AI-enabled financial predictions.	The focus was on financial forecasting, predictive analysis, AI, and	No primary evidence	Primary evidence could have been fetched with more

		ML.		detailed insights.
[8]	The study focussed on possible solutions for mitigation of AI use in predictive analysis.	A case study analysis was done	No primary data	Primary research could have been more evidential.
[9]	Analyse the different forms of barriers	Highlighting the major challenges of adopting new technology, organisation challenges, needs, and regulatory challenges.	Australia was mainly focused on.	Other global countries could have given more comparative analysis.
[10]	Barriers to adoption of AI in	Research on AI, adoption of	Conducted interviews	Other global countries

	strategic decision-making in human social dynamics, based on creative work environment, dynamic form of business.	qualitative decision-making, risk analysis	from only South Africa	could have provided better comparative analysis.
[11]	Case study of Pwc focussing on strategies adopted to re-invent pharma and analyse profitability.	Profit-making after incorporating AI tools.	No secondary data analysis.	Primary data could have given more appropriate results and analysis [23].
[12]	New designing and development of drugs through incorporation of	Transformation in drug designing through the automated	No instance of a detailed funding process	Detailed funding allows for giving insights

	AI.	system.	ss	about resources needed for the research and knowledge of it.
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Table 2: Comparative analysis of LR
(Self-Developed)

Table 2 shows the comparative analysis of different authors, their findings, focus, and gaps throughout their research work.

V. Discussion

A. Interpretation of Results

The above results and findings show a detailed exploratory analysis of both qualitative and quantitative findings. The analysis highlights the potential transformation of AI and its impact on financial operations in the pharmacy industry. The financial services allow for boosting the use of AI in reporting, pricing of cloud, and other interactions that of the customer showing a reflection of the market development with a higher graph from “\$1.09 billion” to “\$12 billion” by the annual year 2033 respectively [14]. The profit making of using “S/4 HANA FICO” allows showing more financial gain about that of the integration of AI. In the pharmacy industry, as an instance for case analysis 1, Pwc, strategies of using AI allow in increasing the profit-making and R&D as per the Excientia analysis of their AI implementation through personalisation of designing of the drug by addressing various solutions for cancer patients [11]. The comparative analysis of literature also shows a wider aspect of geo-

political studies, making the primary data more relevant towards increasing the evaluative metrics for the contextual analysis.

B. Practical Implications

The overall analysis throws light on the critical role of AI in increasing the financial service in pharmacy companies and their operations. In the financial aspect, the tools that are AI-driven allow for improving the efficiency of pharma companies, making them profitable through predictive analysis and customised solutions respectively. In the pharmacy company, the accelerated operations of AI allow for better designing of drugs by addressing certain challenges of healthcare facilities. Certain organisations also gain better insights towards optimising the operation, towards adopting more innovative techniques and technology towards staying competitive. All these challenges allow for maintaining the privacy operation and integration of data towards maintaining the regulatory alignment aligning to that of the cross-cultural collaboration building a sustainable and most ethical form of AI tool incorporation in pharmacy company.

C. Challenges and Limitation

The incorporation of AI in financial operations allows the pharmacy company to face various major challenges which include concerns related to privacy, ethical challenges, and other regulatory measures. The barriers in terms of implementation arise for recruiting skilled experts who know the operation of AI tools. Besides, the resilience of AI allows for managing the quality of data, which causes limitations in areas that are biased sets of data. A certain resistance to bringing change in the organisation allows for complex forms of collaboration through cross-cultural aspects [20]. However ethical consideration allows for the development of

drugs and the risks of AI businesses to make financial decisions and address the limitations effectively.

D. Recommendations

Better investment should be made in recruiting skilled personnel who know the operation of AI development and AI integration [17]. Implementation of data governance will also allow for increasing the quality of the operations, towards using unbiased sets of data addressing the concerns of privacy and ethics [18]. Pharmacy companies also need to foster cross-cultural collaboration toward leveraging the innovation of AI to make an ideal form of application. Developing a clear regulatory policy will help in developing the trust of stakeholders towards incorporating AI in drug design [19]. Financial operations should also incorporate AI towards increasing the interaction of customer through various conversational tools of AI heading for predictive analytics for streamlining their operations.

VII. Conclusion and Future Scope

A. Conclusion

This study has explored various secondary qualitative and quantitative research works, journals, case studies, and other sources to explore the implementation of AI in the financial operation of the pharmacy company. A case study of PwC and New candidate drug designing has been explored to highlight the implementation of AI tools in pharmaceutical operations. The role of AI in profit-making has been prominent from the graphical analysis done in the study showing a positive outcome in the upcoming days.

B. Future research

The future scope of AI-designed customised medicine, predictive analytics in finance, and improved structure of customer engagement allows a bright scope of AI and its role in the

medicine industry [16]. With a continuous form of ethical consideration of AI, collaboration of AI with certain frameworks allows for ensuring a sustainable form of growth allowing for better innovation and the creation of value across different sectors.

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