# Utilization of Artificial Intelligence (AI) in Information Systems to Improve Business Efficiency

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| A R T I C L E   I N F O | ABSTRACT |
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| | Artificial Intelligence (AI) in information systems is a tool that can be used to improve business efficiency. This research aims to review the utilization of AI in information systems, especially in the context of Accounting, Management Information Systems, and Human Capital Management Information Systems, it is very important to understand the potential and examples of applications that apply AI in information systems in a business context. The research uses a literature research methodology which synthesizes this literature review by grouping similar extracted data according to the results measured to answer the objectives. It was concluded that the utilization of artificial intelligence (AI) in Business Accounting Information Systems, Business Management Information Systems, and Business Human Capital Management Information Systems has great potential to improve business efficiency. AI can automate routine tasks, improve data analysis, and provide deeper insights in these three aspects of management. In addition, AI can also help in risk management, financial analysis, and better decision-making.<br><br>*This is an open access article under the CC BY-NC license.* |

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## 1. INTRODUCTION

The role of Artificial Intelligence (AI) in modern business operations is increasingly prominent, offering new opportunities for growth and innovation (Dwivedi et al., 2021). To remain competitive and maximize the potential benefits of AI, Enholm et al. (2022) revealed that businesses must understand its impact on a business's industry and adapt to it. In an increasingly competitive and dynamic business world, the use of AI has helped businesses gain greater advantages in terms of operational efficiency, optimizing business processes, and gaining a greater advantage in the competition. According to Bharadiya (2023) the ways in which AI can be integrated into business operations for maximum impact are vast, ranging from automating repetitive tasks to analyzing large amounts of data quickly and accurately. Industries such as finance, healthcare, and manufacturing have already benefited from AI integration. The potential for AI to revolutionize the way businesses operate and compete is immense.

The use of Artificial Intelligence in routine tasks is one of the prime examples of how AI has improved business efficiency. This automation of routine tasks allows human workers to allocate their time and efforts to more strategic and value-added activities. For example, in a human resources department, AI can be used to automate tasks such as screening job applications and finding candidates who meet certain criteria. This helps save time and cost in the recruitment process. In

addition, AI also plays an important role in data analysis to improve business decision-making. With its ability to collect and analyze data from multiple sources quickly and accurately, AI provides valuable insights that can be used to identify market trends, patterns, and opportunities. For example, companies can use AI to analyze customer behavior and product preferences, which can help them optimize marketing strategies and product pricing.

However, it is important to remember that AI is not a replacement for humans, but rather a tool that can be used to improve business efficiency and effectiveness. Therefore, this research aims to review the utilization of AI in information systems, especially in the context of Accounting, Management Information Systems, and Human Capital Management Information Systems, it is very important to understand the potential and examples of applications that apply AI in information systems in a business context.

## Artificial Intelligence (AI)

The field of computer science known as artificial intelligence (AI) focuses on creating computer systems that can carry out tasks that would typically need human intelligence. It includes a broad range of methods, tactics, and strategies with the goal of enabling computers to carry out tasks including pattern recognition, judgment, learning, and human language understanding, among others. AI aims to create machines that can think, learn, and adapt like humans in various industries (Mhlanga, 2022). Artificial intelligence (AI) is having a significant impact on business since it is altering how businesses run and opening up new development prospects. Verhoef et al. (2021) found that AI is able to increase crucial performance measures like revenue, productivity, business growth, digital transformation, and efficiency thanks to its capacity for processing enormous amounts of data. The role of artificial intelligence (AI) is as follows.

1. Automation of routine tasks, freeing up employees to focus on more creative and strategic work.
2. By offering precise and fast data analysis, you can help people make better decisions.
3. Enhancing client satisfaction with more individualized help and recommendations and personalized interactions.
4. Cut expenses by streamlining procedures and finding opportunities to boost productivity.
5. Helps in detecting and preventing fraud by identifying patterns and anomalies in data.
6. Boost predictive maintenance's precision and speed in the manufacturing and other sectors to cut down on production downtime and save costs.
7. Identify trends and opportunities that you may otherwise miss to gain a competitive advantage.
8. Improve cybersecurity procedures by promptly identifying and neutralizing threats.
9. Facilitate companies to create and introduce new goods and services more quickly, spurring innovation and expansion.

Artificial intelligence is now present in practically every facet of life, from autonomous cars to life-saving medical technologies. Artificial intelligence has permeated practically every part of life, whether it is to enhance processes, lessen human error, offer deeper insights, promote better decision-making, or enable 24/7 capabilities. It's realistic to assume that human-led analysis conducted without the aid of technology won't be able to keep up with the projected growth of the global big data market, which is predicted to reach approximately US$103 billion by 2027. Businesses are employing a huge amount of data to find possibilities, and this data is growing swiftly. Because of its deep learning algorithm maps, artificial intelligence is able to think more quickly than humans. So the answer to "why AI?" is simple - because it makes perfect business sense, especially if you don't want to be left behind in the digital economy.

## Information System (IS)

In this digital era full of fierce competition, it is very important for managers in a business to fully realize and accept the changes that continue to develop. One of the fastest growing changes is in information systems. This change in information systems is caused by advances in computing and information technology (Ismagilova et al., 2019). Applying the concept that information systems are strictly under the control of the IT department can result in a detrimental situation for the company.

Therefore, it is very important for businesses to recognize the contribution of information systems in business effectiveness.

1. Systems and Innovation Possibilities: Information system advancements have created both possibilities and risks. Businesses have the responsibility to recognize and seize opportunities. Organizations must devise tactics that optimize the use of information technology in order to boost overall efficiency. Automation is the most widely used information systems practice. Automation is helpful, but information systems innovation offers companies a competitive edge.

2. Systems and Customer Satisfaction: Companies are well aware of how the introduction of information systems has shortened product life cycles, decreased profit margins, and introduced new items. In an instance like this, firms must aim to provide customers with happiness, as mere customer satisfaction would not suffice. Data warehousing and analytics-capable information systems can assist companies in getting feedback from customers and creating products that surpass their expectations.

3. Business Systems and Productivity: Businesses require different types of information systems to address different processes and needs. An efficient business transaction system makes businesses productive. Business transaction systems ensure that routine processes are captured and executed effectively, such as sales transactions, cash transactions, payroll and more. In addition, information systems are required for executive decision-making. Top leaders need the right internal and external information to design strategies for the business. Decision support systems are made to suitably carry out this purpose. The total productivity of the company is influenced by executive decision support systems and business transaction systems.

4. Information Systems and Worker Productivity: Enhanced worker productivity has been made possible by information systems. Increased cooperation has made it possible for numerous projects to be implemented and carried out smoothly across numerous areas and locations thanks to the introduction of email, video conferencing, and shared whiteboard collaboration between enterprises and departments.

Information Systems as Value Adders for Businesses: Information systems are used by businesses to accomplish both short- and long-term objectives and a variety of methods. The goal of information system development is to boost corporate efficacy and productivity. The current business environment, management style, and organizational structure all have a significant impact on the success of information systems (Gelinas et al., 2018). Businesses can achieve lower costs, better productivity, revenue and profit growth, and a competitive advantage in the marketplace with the proper creation, implementation, and usage of information systems. In order to fully utilize information technologies, employees' acceptance of them is a critical factor. The creation and application of information technology has completely changed how businesses operate. It has boosted productivity and improved company efficacy.

## 2. RESEARCH METHOD

This study's methodological approach is known as "literature research." Literature research is defined as studying or critically analyzing information, concepts, or discoveries found in academically oriented literature in order to provide theoretical and methodological contributions to a particular subject. Journal articles written in Indonesian and English related to the topics of "Information Systems", "Artificial Intelligence (AI)" and "Business Efficiency" were the selection criteria. The narrative method was used to synthesize this literature review by grouping similar extracted data according to the outcomes measured to answer the objectives. This was done to answer the research questions. Reading the journals and examining them carefully to gain a deeper understanding of the abstract and full-text analysis. Once the journal review is completed, an examination of the information presented in the research will be conducted

## 3.    RESULTS AND DISCUSSIONS
### Artificial Intelligence (AI) on Business Accounting Information System

Askary et al. (2018)conducted a previous literature review on the topic of artificial intelligence's potential to increase the reliability of accounting outputs. They concluded that while artificial intelligence has the potential to reduce risks associated with accounting systems, this has not yet been demonstrated. They supported their conclusion with the argument that, in the end, inaccurate inputs will always affect inaccurate outputs, regardless of how accurate the system is. However, because of the high caliber and effectiveness of the accounting system's output, this research demonstrates that accounting artificial intelligence plays a major role in lowering the percentage of losses linked to the generation of false and inaccurate accounting information. As a result, senior management is able to make better financial and accounting decisions.

(Luo et al., 2018)state that the utilization of artificial intelligence (AI) in accounting information systems has become one of the important innovations in the modern business world. In this context, AI refers to the ability of computers to execute tasks that usually require human understanding, such as data analysis, prediction, and decision making. The application of AI in accounting information systems can provide a number of significant benefits in improving business efficiency. One of the main benefits of AI in accounting information systems is its ability to automate routine and repetitive tasks (Spring et al., 2022). For example, the process of recording financial transactions, tracking inventory, and analyzing financial statements can be automated by AI. This not only saves time but also reduces the risk of human error that may occur in the process. In addition, AI can also help in more sophisticated data analysis (Davenport, 2018). AI can be used to analyze financial trends, identify anomalies in transactions, and even make predictions about future financial performance. Thus, business decision-making can be based on more accurate and relevant information. In addition, AI can also be used in financial risk management. AI can monitor market fluctuations, identify potential risks, and provide recommendations on actions to take to manage those risks. This allows companies to respond quickly to changes in economic or market conditions that may affect the financial health of the business (Hashem & Alqatamin, 2021). However, it is important to remember that the utilization of AI in accounting information systems also raises a number of ethical questions. For example, data privacy concerns, bias in AI algorithms, and impact on human employment are some of the issues that need to be carefully considered.

However, (Hamadneh et al., 2021)stress the value of AI in accounting and the contribution of intelligent components to higher-quality accounting output. Furthermore, the study concluded through a review of prior research that the use of artificial intelligence systems and their introduction into accounting work results in reports that are more accurate, effective, and efficient, and that the caliber of accounting information is higher than that. Accounting information systems powered by artificial intelligence have the ability to produce comprehensible, pertinent, trustworthy, and comparative data on demand. According to a study by Al-Sayyed et al. (2021), artificial intelligence techniques in all of their forms have demonstrated their commercial value in the accounting auditing profession because they help provide the instruments and protocols needed by auditors to carry out the audit process in a way that is clear, accurate, and helpful to decision makers. The utilization of artificial intelligence (AI) in accounting information systems can provide a number of concrete examples that can improve business efficiency. Here are some examples of AI utilization in improving efficiency in the context of accounting :

1.  Automated Processing of Financial Data: AI can be used to automate the processing of financial data. For example, AI can read and classify invoices, extract important information such as dates and amounts, and enter them into the accounting system without human intervention. This reduces the time needed for these administrative tasks and reduces the risk of errors. Examples of AI-based applications such as "KlearStack" can be used to automate the processing of invoices and financial documents.
2.  Fraud and Anomaly Detection: AI can help in detecting fraud or anomalies in financial transactions. Machine learning algorithms can monitor transaction patterns and detect unusual or suspicious behavior, such as credit card fraud or internal theft. This allows companies to take immediate action to prevent further losses. AI-based applications such as

"SAS Fraud Detection" or "ThetaRay" can help in detecting fraud or anomalies in financial transactions.

3. Cash Prediction and Financial Forecasting: AI can be used to analyze historical data and generate more accurate financial forecasts. This helps companies in long-term financial planning and identifying trends or patterns that may not be visible to humans. AI-based applications such as "Prophix" or "TIBCO Statistica" can be used for financial analysis and forecasting.

4. Automated Financial Reports: AI can generate financial reports automatically based on the data in the system. This saves the time usually required to compile manual financial statements and reduces the risk of errors in reporting. AI-based applications such as "BlackLine" or "FloQast" can generate financial reports automatically based on the data in the system.

5. Market Sentiment Analysis: AI can monitor news, social media, and other information to analyze market sentiment and its impact on a company's stock price or financial condition. This can help companies make better investment decisions. AI-based applications such as "Lexalytics" or "Brandwatch" can be used to monitor and analyze market sentiment.

6. Inventory Management: In businesses that involve inventory, AI can help in optimizing inventory levels. This can avoid overstock or shortage of stock, which can disrupt a company's cash flow. AI-based applications such as "Llamasoft" or "StockIQ" can help in inventory management.

7. Virtual Financial Consultation: AI-based chatbots can provide basic financial consulting to employees or customers. These chatbots can answer questions about financial statements, company policies, or taxes, saving accounting staff more valuable time. AI-based chatbots such as IBM's "Watson Assistant" or "Ada Support" can provide virtual financial consulting to employees or customers.

This utilization of AI in accounting information systems helps improve business efficiency by automating routine tasks, improving data analysis, and providing deeper insights. However, keep in mind that the use of AI should also be mindful of relevant privacy and ethics policies and ensure that these systems are well supervised to avoid potential bias or errors.

**AI in Business Management Information Systems**

The utilization of artificial intelligence (AI) in management information systems has become key in efforts to improve business efficiency in the digital era (Enholm et al., 2022). Management information systems (MIS) are an important foundation in the operational and strategic management of an enterprise (Grover et al., 2018). In this context, AI can provide various significant benefits in improving business efficiency. One of the key benefits of AI in a SIM is its ability to automate administrative and routine tasks. For example, AI can be used to manage customer data, process orders, and optimize supply chains more efficiently. This not only saves time but also reduces the risk of human error that can arise in these processes. In addition, AI can enhance more sophisticated data analysis in the context of SIM (Berente et al., 2021). Machine learning algorithms can extract insights from large volumes of business data, identify market trends, and forecast customer demand with a high degree of accuracy. This helps managers make better and more informed decisions. The utilization of AI in SIM also helps in human resource management. AI can be used to analyze employee performance data, provide personalized feedback, and even assist in the recruitment process (Hunkenschroer & Luetge, 2022). In this way, companies can allocate human resources more efficiently and support staff development. On the other hand, the utilization of AI has changed various tasks & fields, including Management Information Systems in business. AI can be applied in a number of ways, such as rule-based systems, expert systems, and machine learning. These are a few of the particular effects:

1. Data quality: This can be used to help organizations enhance data quality and make sure that the data used in MIS is accurate and comprehensive. It can also be used to evaluate data and detect errors, missing data, and inconsistencies. Algorithms for Natural Language Processing (NLP), for instance, examine and sanitize unstructured data, including comments left by customers or posts on social media. AI may assist businesses in identifying patterns

and trends that are challenging to detect manually by automatically classifying and filtering this data, enabling staff members to make data-driven decisions more precisely and effectively.

2. Data Security: Unauthorized access and data breaches are two security risks that AI can identify and address. This can assist companies in protecting sensitive data and enhancing employee data security. AI is capable of analyzing user behavior and spotting abnormalities that can point to dishonest or malevolent behavior. When an employee attempts to access sensitive data by logging onto the business network from an unfamiliar location, for instance, the AI system may identify this action as suspicious and require extra authentication checks or deny access.

3. Data sharing: Enables more effective and convenient data sharing by integrating various systems and apps. This can facilitate employee operations for firms and foster better teamwork. For instance, businesses can deploy chatbots driven by AI that are able to interface with various MIS programs. NLP can be used by a chatbot to comprehend user inquiries and obtain pertinent information from a variety of apps. A chatbot can be instructed by a salesperson to obtain a customer's purchase history, and it can do so by accessing customer data and sales software.

4. Data Capture: Artificial intelligence (AI) can automate the data collecting and analysis process, decreasing the requirement for human interaction and boosting analytical speed and accuracy. Machine learning algorithms, for instance, can be used to instantly generate reports, automatically classify and categorize data, and spot trends and abnormalities. This can assist companies in enhancing employee information systems (MIS) without increasing the number of employees or burdening current employees more.

5. Data analytics: AI-powered predictive analytics can enhance the effectiveness of personnel management information systems (MIS) by assisting businesses in making more precise and data-driven decisions. For instance, a retail business can forecast the demand for a specific product over a given time period using predictive analytics driven by AI. In order to forecast the anticipated demand for a product, artificial intelligence (AI) systems can examine past sales data in addition to outside variables like economic and meteorological trends. The business can then utilize this data to plan inventory levels, modify prices, and assign resources to sales and marketing initiatives.

6. Improved Decision Support Systems: Artificial Intelligence (AI) can assist MIS in providing decision support by processing and analyzing vast volumes of data instantly and delivering insights that can be utilized to improve business choices. Let's take an example where a retail company tracks sales information from multiple locations using MIS. Artificial Intelligence (AI) enables MIS to instantly evaluate sales data and spot patterns and trends, including which products are selling the best, which stores are operating at peak efficiency, and which client segments are driving sales. The management team of the business can benefit from decision assistance from MIS based on these insights, allowing staff members to make well-informed choices on product pricing, marketing tactics, and inventory management. The AI-powered MIS may recommend shifting a product to an underperforming store in order to boost sales if it finds that a certain product is selling well in one location but not in another.

The utilization of artificial intelligence (AI) in management information systems (MIS) can provide a number of concrete examples that can improve business efficiency. Here are some examples of how AI can improve efficiency in the context of SIM, along with the names of possible applications :

1. More Efficient Supply Chain Management: Applications like "Llamasoft" use AI to process supply, demand, and distribution data, allowing companies to plan and manage supply chains more efficiently. AI helps in identifying optimization points, reducing inventory costs, and avoiding stock shortages that can affect production and customer service.

2. Predictive Analytics for Decision Making: Applications like "Tableau" or "QlikView" use AI to analyze complex business data. This allows managers to make better decisions based on

the insights provided by AI. AI can identify market trends, changes in customer behavior, and new business opportunities.

3. More Effective Financial Management: Applications like "Adaptive Insights" use AI to forecast company finances. This helps managers in budget planning, resource allocation, and financial risk management.

4. Automated Document Processing: Applications like "ABBYY FlexiCapture" use AI to recognize, classify, and extract information from business documents such as invoices, contracts, and letters. It automates time-consuming administrative tasks.

5. Efficient Human Resource Management: Applications like "Workday" use AI to support human resource management. AI can assist in the recruitment of suitable employees, provide customized training, and analyze employee performance for identification of further development.

6. More Personalized Customer Service: Apps like "Zendesk" use AI to improve customer service. AI chatbots can provide quick answers to customers, direct customers to appropriate sources of information, and assist in resolving issues quickly.

7. More Accurate Risk Analysis: Applications like "RiskWatch" use AI to analyze business risks. AI can identify potential risks, provide impact estimates, and provide recommendations to manage risks more effectively.

By using these AI-based applications in management information systems, companies can leverage artificial intelligence to improve business efficiency. However, it is important to conduct a careful evaluation of business needs and ensure that these applications are effectively integrated with existing processes and comply with applicable regulations.

**Artificial Intelligence (AI) on Business Human Capital Management Information System**
Application of artificial intelligence (AI) to information systems for human capital management (HCM). HCM is the use of cutting-edge technology to automate repetitive HR processes, offer personalized experiences, and extract insights from HR data. These technologies include artificial intelligence, machine learning, natural language processing (NLP), and deep learning (Muris, 2021). Big Data, the foundation of AI in HCM, unifies disparate HR data from around the company into a single system. Using this intelligent technology, data may be analyzed to anticipate business performance from the human resources perspective by understanding how people interact with their work, peers, and work environment. Some examples of AI utilization in HCM include more efficient recruitment with selection process automation, more objective performance management with data analysis, faster and personalized HR service delivery through AI-based chatbots, better personalization in employee development, and data analysis to support strategic decisions. However, before adopting AI solutions in HCM, companies need to consider change management, ensure data integrity, document KPIs, and plan adaptation strategies for HR stakeholders and employees.

In addition, AI can also be used in performance management. AI algorithms can monitor employee performance in real-time, provide feedback based on collected data, and even provide recommendations for employee development (Vrontis et al., 2022). It helps in maximizing productivity, identifying training needs, and addressing performance issues quickly. In terms of payroll, AI can automate the salary calculation process, manage changes in tax regulations, and ensure payroll accuracy in accordance with company regulations and applicable laws (Brooklynworks & Pasquale, 2019). This reduces the risk of errors and ensures that employees are paid correctly and on time. Not only that, AI can also help in employee career development. By analyzing data on performance, preferences, and training, AI can provide recommendations for appropriate career paths for each employee, helping companies retain valuable talent and improve employee retention. However, it is important to remember that utilizing AI in HCM information systems also presents a number of ethical challenges, such as employee data privacy and fairness in AI-based decision making. Therefore, companies need to consider these ethical aspects in the application of AI technology in human resource management. The use of AI in HCM can improve efficiency in six key components of the employee lifecycle.

1. Employee recruitment: Starts before recruiters approach candidates with profiles. Employee recruitment typically reflects the employer branding perceptions that potential candidates

have about the company. These perceptions can be influenced by word of mouth, general business performance, employee stories, and media coverage (Hunkenschroer & Luetge, 2022).

2. Recruitment: Finding individuals and making job offers to those who meet the qualifications. Since a large portion of hiring is now automated, the emphasis on people shifts from administrative duties to enhancing the applicant experience, raising engagement, and pitching positions to potential employees.

3. Onboarding: Possibly the most important component of sustained engagement is onboarding. A successful onboarding process guarantees that new hires contribute significantly to the workforce and are successfully incorporated into it. During onboarding, a new hire's productivity is assessed.

4. Talent Development: How can you maintain employee engagement and help them become more proficient in their jobs after onboarding new hires? Succession planning, performance management, and on-the-job training are all included in talent development. An employee's talents and skills can be translated into employee succession plans using data from performance reviews and weekly sign-offs.

5. Retention: It is incorrect to consider retention as a stand-alone component of the employment lifecycle. Still, certain characteristics have a greater impact on retention than others. Retention is more likely to be impacted by incentives, stock options, and employee benefits than by learning and development. Retention will be even more crucial as a result of shifting labor demographics and HR executives' need to demonstrate the return on investment of employee HR initiatives.

6. The final phase of the employee lifecycle is separation, which offers HR departments a fantastic chance to collect important information through exit interviews and feedback. Furthermore, one of the biggest factors influencing a candidate's opinion of the company is probably their previous employer. Employee testimonials have a significant influence on the candidate's perception of the company.

On the other hand, the utilization of artificial intelligence (AI) in human capital management (HCM) information systems has many applications that can improve business efficiency. Here are some examples of AI applications in HCM along with the name of the information system application:

1. Automated Recruitment: The "TalentSoft" application utilizes artificial intelligence to simplify the recruitment process. This is done by combining data from applicants with available job requirements. AI helps in automated matching, so that candidates who best match the job can be identified faster. This saves HR time and ensures that the most qualified candidates are selected.

2. Data-driven Performance Management: The "Workday" app uses AI to change the way performance management is done. AI enables analysis of employee performance based on objective data, such as work results and goal achievement. This helps management make more informed decisions in employee development and identification of training needs.

3. Personalized Learning: The "Cornerstone OnDemand" app leverages AI to provide a more personalized learning experience to employees. AI analyzes an employee's training history, preferences, and progress to recommend appropriate training. This increases employee engagement in employee self-development.

4. HR Service Chatbot: The "PeopleDoc" app integrates an AI chatbot in the HCM system to provide real-time support to employees. It can answer general questions about company policies, employee benefits, or other administrative issues. This reduces the burden on the HR team and allows employees to get answers faster.

5. Talent Analytics with Visier: The "Visier" app uses AI to analyze employee talent data. This includes assessment of employees' skills, experience, and achievements. With the help of AI, companies can identify standout potential employees and plan career development accordingly.

6. Workforce Planning: The "Kronos Workforce Ready" app leverages AI to help companies plan for future workforce needs. AI uses historical data, performance trends, and other

information to create more efficient replacement plans. This helps organizations avoid employee shortages or overages.

7. Employee Satisfaction Measurement: The "Qualtrics" app uses AI to analyze employee satisfaction surveys. AI can identify patterns and trends in employee responses, allowing companies to take appropriate actions to improve employee satisfaction and engagement.
8. Attendance Management: The "BambooHR" app utilizes AI to predict employee absenteeism. AI combines historical absenteeism data with factors such as weather, holidays, and common illnesses to identify absenteeism patterns. This helps companies plan for replacements better.
9. Salary and Compensation Analytics with PayScale: The "PayScale" app uses AI to analyze employee compensation data. AI compares salaries and benefits to market data to ensure that companies are paying competitively and according to employee performance levels.
10. Succession Management: SAP's "SuccessFactors" application uses AI to identify internal talent within the organization. This allows companies to better plan for succession, identify suitable internal candidates for key positions, and develop employees as needed.

In all these applications, AI helps companies make smarter decisions, improve efficiency in human resource management, and provide a better employee experience. However, it should be noted that the use of AI in HCM must also pay attention to ethics and employee data privacy to ensure personal information protection and integrity.

**The Role of Artificial Information Systems to Improve Business Efficiency**

The role of artificial intelligence (AI) in information systems to improve business efficiency is significant. AI has the ability to provide various benefits in terms of automation, data analysis, decision making, personalization, and risk management. Here are some key aspects of AI's role in improving business efficiency in information systems :

1. Automation of Routine duties: Data processing, inventory management, and other administrative duties are among the repetitive and routine operations that artificial intelligence (AI) can automate. Employee workloads are lessened as a result, freeing them up to concentrate on projects requiring critical and creative thought.
2. Deep Data Analysis: AI has the ability to analyze data on a large scale quickly and accurately. As a result, businesses are able to spot patterns, trends, and insights that help them decide more wisely. For example, AI can help companies with market analysis, customer segmentation, and supply chain optimization.
3. AI-Powered Decision Making: AI can be used to support business decision-making. By integrating AI in information systems, companies can have access to recommendations and predictions that are based on relevant data. This helps managers and company leaders in making more informed decisions.
4. Customer Experience Personalization: AI can be used for customer experience personalization. With advanced data analysis, companies can offer product or service recommendations that match the individual preferences and behaviors of customers. This increases customer retention and satisfaction levels.
5. Risk and Security Management: AI can also be used in risk and security management. AI can monitor financial transactions and network activity to detect cyber threats and suspicious activity. This helps companies protect themselves from potential threats and data breaches.

Business Process Development: AI can assist companies in developing and improving business processes. Through continuous monitoring and analysis, companies can identify areas where business processes can be optimized or refined.

## 4.    CONCLUSION

The use of artificial intelligence (AI) in business management, business accounting, and business human capital management information systems was found to have a significant potential to increase business productivity. AI can automate routine tasks, improve data analysis, and provide deeper insights into these three aspects of management. In addition, AI can also help in risk management, financial analysis, and better decision-making. Therefore, the use of AI in these three areas is an

increase in operational efficiency, better decision-making, and the potential to reduce the risk of human error. The use of AI can also generate more accurate and relevant data to support management in managing their business. However, keep in mind that the use of AI also brings challenges related to data privacy, bias, and ethics that need to be carefully considered.

It is advised that future studies look more closely at how AI is used in these three areas of management and how it may be tailored to meet various business requirements. In addition, research can focus on the ethical aspects of AI use, including data privacy, fairness in decision-making, and the impact on human employment. The development of more sophisticated AI models and an increased understanding of how AI can be optimally used in business are also interesting research areas. In addition, longitudinal studies can be used to look at the long-term impact of AI implementation in organizations. Further research can help explore the full potential of AI in improving the efficiency and quality of management in modern businesses

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