



Artificial intelligence technologies in international management

Tetiana Aizenberh*

Postgraduate Student

Taras Shevchenko National University of Kyiv

01033, 60 Volodymyrska Str., Kyiv, Ukraine

<https://orcid.org/0009-0003-2389-9135>

Abstract. The study aims to investigate the effectiveness of artificial intelligence (AI) and determine its impact on the management processes of international companies. A methodology was created to optimise international business processes, including introducing AI to improve management efficiency, automate strategic planning, and analyse market data and forecast trends. The study addressed various aspects of AI technologies in international management, covering key areas such as business process automation, document processing, inventory management, logistics, customer communications, analytics and forecasting, and human resources management. Automation of processes has reduced costs and improved the quality of service. Machine learning algorithms in logistics and inventory management have simplified demand forecasting and optimised the supply chain. Communication with customers was automated via robots and chatbots, which improved service. Analytics and forecasting based on data collected and processed by AI allow companies to make informed decisions and plan strategies effectively. The use of AI has significantly increased the efficiency of management processes. These technologies assist companies in adapting to market changes faster and increase their competitiveness in the global business environment. The study determined that the ability of AI systems to analyse large amounts of data, predict market trends, automate routine tasks and reduce decision-making risks enables companies to respond more quickly to market changes, improve the accuracy of strategic planning and ensure a high level of competitiveness in the global business environment. The practical value of this study is to provide businesses with a detailed understanding of how to integrate AI into various aspects of international management

Keywords: process automation; algorithms; optimisation; business processes; demand forecasting

INTRODUCTION

Artificial intelligence (AI) technologies are substantial in international management, facilitating innovation and improving the efficiency of business processes. One of the main areas of AI application is the automation of routine tasks and optimisation of internal processes. Machine learning algorithms allow the automation of repetitive operations, which increases the efficiency of using human resources and the company's resources in general. In logistics, AI is used to optimise transport routes and manage the supply chain. Analytical models can forecast demand, plan deliveries and use resources with maximum efficiency. This is especially important in a globalised world where the speed and accuracy of logistics operations are key competitive advantages. In addition, AI data analysis allows international management companies to effectively predict

market trends, respond to changes in the economic environment, and minimise risks. Intelligent analytical tools can be used to manage business on sound data and support strategic decision-making at all levels of the organisation. Therefore, exploring the potential applications of artificial intelligence in business management is currently both relevant and promising and it is generating significant interest within the scientific community.

One of the main existing problems in the field is the difficulty of integrating AI technologies into international management, considering various cultural, economic and legal aspects. I. Zadorozhna (2022) focused on the prospects of using AI in management. As determined, AI can significantly improve management processes, optimise resources, and increase the efficiency of organisations.

Suggested Citation:

Aizenberh, T. (2024). Artificial intelligence technologies in international management. *University Economic Bulletin*, 19(1), 34-43. doi: 10.69587/ueb/1.2024.34.

*Corresponding author



Copyright © The Author(s). This is an open access article distributed under the terms of the Creative Commons Attribution License 4.0 (<https://creativecommons.org/licenses/by/4.0/>)

O. Okhotnikova & R. Okhotska (2022) studied the introduction of AI in legal management, focusing on foreign experience and emphasising the importance of legal aspects in the implementation of AI, in particular, ethical compliance and data protection. However, it is necessary to study the impact of cultural peculiarities on the integration of AI into international management, assess the effectiveness of AI adaptation to different legal systems, and consider the ethical aspects of AI application in management.

Another problem is the lack of understanding of the principles of AI, the possibilities of its application, ethical issues and the integration of these technologies into business processes, which limits its potential benefits in international management. A. Piskun & M. Sierov (2023) determined that AI can significantly improve decision-making processes, optimise resources, and increase the efficiency of management processes. A. Sestino & A. De Mauro (2022) determined that AI helps to improve the efficiency of business processes, increase the competitiveness of companies, and reduce costs. The main results of their research show that AI can increase productivity, automate routine tasks, and improve customer service using AI. Gaps that need further study include the ethical use of AI, its impact on the workforce, and the adaptation of different cultural contexts. M. Artar *et al.* (2022) studied the application of AI in human resources management, finding that it can significantly improve the recruitment and management processes. Y. Pan *et al.* (2023) found that successful AI adoption depends on cultural, organisational, and technological factors. Therefore, it is necessary to study the adaptation of AI to different cultural contexts in international management and the long-term impacts of AI adoption on strategic management and planning in multinational companies.

The use of AI technologies is becoming increasingly relevant due to the need to improve cybersecurity. Research by S. Zeadally *et al.* (2020) showed that employing machine learning methods helps detect and prevent cyber threats in real-time, significantly reducing the risk of cyberattacks. B. Naik *et al.* (2022) conducted a comprehensive review of AI methods used to strengthen cybersecurity and assessed their effectiveness as high due to their ability to quickly detect and respond to threats. It is necessary to address the technical challenges and limitations of integrating AI into cybersecurity systems.

A common challenge is the need to effectively integrate these technologies in complex cross-cultural and international business environments. N. Jayawardena *et al.* (2022) explored how AI can analyse large amounts of market data and provide deep insights into customer behaviour. M. Barriga (2019) determined that the use of AI in marketing helps automate many routine tasks, personalise customer interactions, and predict market trends. This improves the effectiveness of marketing campaigns and contributes to a better understanding of customer needs. However, attention should also be given to the impact of artificial intelligence on employment and workers' skills, as well as the integration of AI into existing business processes, to ensure

its harmonious implementation without negative effects on human capital and social responsibility.

This study focuses on several key aspects. First, it is adaptation to the global market environment, which involves the development of flexible management strategies to ensure the competitiveness of companies. Further, it is necessary to analyse how AI technologies can contribute to effective data management and risk mitigation in international business. The cross-cultural aspects of implementing such technologies also require attention, as cultural diversity can affect the success of their integration and adoption. Ethical standards for the use of AI in international management are also an important topic, especially in the context of employee and customer relations. There is a need to explore how AI can improve the efficiency of management processes through data analysis and strategic decision support. The aim of the research is to explore the potential of AI to enhance management processes in international companies, identify opportunities for using AI to manage cross-cultural communications, optimize decision-making, and improve competitiveness in international markets.

MATERIALS AND METHODS

A mixed approach that combines qualitative and quantitative methods was used to conduct a comprehensive analysis of process automation at enterprises using AI. A variety of sectors, including document processing, inventory management, logistics, customer relationship management (CRM), marketing, financial management, human resources and cybersecurity, were covered.

To address the use of AI in business process automation, a detailed analysis of scientific and professional literature was conducted, which identified the main research areas and current issues in this area. The available publications, reports and research materials on the use of AI in business processes were studied (Davenport, 2018). Documents on AI implementation in companies published in specialised publications were analysed as well (Cam *et al.*, 2019). Analysis of examples of successful AI implementation in various business areas published in industry reports and analytical articles. Key documents include Gartner Magic Quadrant Reports, which provide overviews of AI leaders in various markets, including data analytics, CRM, and process automation (Gartner: Magic quadrant..., 2022). Forrester Wave Reports offer detailed analyses of AI solution providers in areas such as natural language processing (NLP) and marketing automation (Evelson, 2020). McKinsey & Company Industry Reports examine the impact of AI on business models, strategies, and results in specific industries such as finance, healthcare, and retail (Artificial intelligence in..., 2021).

The study focused on the use of AI to automate document processing, including text recognition, document classification, and automation of routine tasks, which helped to increase efficiency and reduce costs. For this purpose, NLP and optical character recognition (OCR) methods were used. NLP was used to analyse textual data

such as CVs, customer reviews, and contracts, which allowed for the automatic extraction of key information and text classification. OCR was used to convert text from paper documents into digital format, which automated the processing of physical documents. The statistics used to evaluate this automation included measurements of document processing speeds before and after AI implementation, the number of errors, and the cost of document processing (The Future of..., n.d.).

An econometric method was used to evaluate the use of AI to optimise inventory management and procurement automation, including an analysis of the accuracy of demand forecasting, changes in inventory levels and storage costs before and after the introduction of the technology. The analysis of the impact of AI on business process performance included measuring information processing time, task completion speed, and the overall impact on performance. For this purpose, internal corporate data was used to record the speed and efficiency of tasks before and after the introduction of AI technologies. The quality assessment included determining improvements in accuracy, error reduction, and customer satisfaction. This was investigated by examining feedback on web pages and analysing customer loyalty indicators such as Net Promoter Score (Gillis, 2006). Difficulties and obstacles in AI integration were identified by analysing technical limitations, problems with staff adaptation, and other challenges identified in the process of implementing AI in organisations.

Statistical methods were used to analyse large amounts of data on the use of AI, which assessed the impact of these technologies on the performance of companies. This included an analysis of changes in costs, productivity and efficiency of management processes before and after the introduction of AI. A SWOT analysis of the strengths, weaknesses, opportunities, and threats associated with AI implementation identified the main advantages and challenges facing companies. This method was used to assess the potential risks and opportunities of AI integration in various business environments. A comprehensive study of all aspects of AI implementation included technical, economic, and organisational aspects. This allowed to gain a holistic view of the impact of AI on business processes and identify key components for successful technology integration.

RESULTS

Enterprise management automation using AI technologies covers a wide range of processes aimed at increasing efficiency, reducing costs, and improving the quality of tasks. AI document processing is a critical element of modern business process management, as it facilitates and speeds up the processing of large amounts of information. The first key aspect is text recognition. AI systems use natural language processing algorithms to automatically analyse documents such as invoices, contracts or reports. This efficiently extracts important data such as dates, amounts, and names of goods or services, which simplifies accounting, analysis and reporting processes. The second aspect – document

classification and indexing – allows AI systems to automatically group documents by their type and importance. For instance, the system can recognise invoices, contracts, or reports and assign them to the appropriate categories depending on their content. This simplifies the subsequent management of documents, providing quick access to the necessary information without the need to manually review a large amount of documentation. Indexing helps to structure and organise documents for quick search and access to the data required, which is key to increasing productivity and reducing time spent on administrative tasks.

Inventory management with AI is becoming a necessary element of business process optimisation in today's environment, especially in the face of increasing complexity and competition in the market (Gonçalves, 2022). Key aspects include demand forecasting and inventory optimization, which are crucial for efficient supply chain management and cost reduction. The use of machine learning algorithms for demand forecasting allows companies to analyse large amounts of data, including sales history, the impact of external factors (e.g. environmental conditions, weather) and consumer behaviour. This helps to more accurately determine future demand for goods and services, which is critical for production planning and inventory management. For instance, systems can automatically analyse demand trends and respond to them by changing production volumes or ordering new batches of goods. Inventory optimisation involves automatic management of stock levels based on demand forecasts and optimal service levels. AI analyses data on demand, spending rates, and inventory availability to strike the right balance between minimising inventory and ensuring high availability of goods to customers. This can avoid cost overruns and maintain optimal stock levels, which supports production efficiency and customer satisfaction. The use of AI in inventory management also helps to improve the accuracy of forecasting and optimising inventory strategies in real-time, making it a key tool for modern companies seeking to achieve competitive advantage in challenging market conditions.

Logistics in modern business includes the efficient management of transport routes and the supply chain, where AI plays a key role in optimising processes and costs (Sharma *et al.*, 2022). AI algorithms are used to optimise transport routes, which avoids congestion, reduces fuel costs and shortens delivery times. These systems analyse a large amount of data, such as traffic information, weather forecasts and traffic schedules, to automatically determine the most optimal routes. This approach helps companies effectively manage their fleet and ensure timely delivery of goods and services to customers. Automation of supply chain processes using AI includes the automatic management and coordination of orders, production, and delivery. AI systems analyse demand, stock levels, lead times and other factors to optimise order planning and execution. This helps to avoid delays and increase efficiency in the supply chain, which is critical to maintaining high-quality customer service and reducing overall company costs.

The application of AI in logistics allows companies to achieve significant improvements in productivity and efficiency, which is an important factor in competitiveness in the modern market. In the context of international management, where companies operate in international markets, the use of AI to automate communication processes with customers is a critical element (Gillis, 2006; Meyer *et al.*, 2020). Key aspects include automating query responses, providing 24/7 customer support and improving the overall customer experience.

Robots and chatbots are used to automatically process and respond to customer queries via websites, mobile apps or social media platforms. They are programmed to recognise keywords or phrases and provide answers to popular questions. This provides a quick and efficient way to resolve standard customer queries, such as product information, order status, or return procedures. Chatbots allow companies to provide customer support services around the clock, without human intervention. They can answer questions, even during hours when human operators are not available, which improves service availability for customers in different time zones and reduces response times. The use of robots and chatbots in customer service also helps to reduce service costs and increase customer satisfaction. They provide a quick response to queries and standardise service processes, making them an essential tool for modern businesses seeking to maintain a high level of customer service and engagement.

AI technologies are becoming a key tool in modern international management, especially when processing large amounts of data (Duan *et al.*, 2019). They are used to analyse trends, forecast demand and assess risks, allowing companies to make informed decisions and plan their strategies effectively. AI is used for the automated processing and analysis of large amounts of data, commonly referred to as “big data”. This data can be collected from a variety of sources, including transactional data, social media data, sensor data. AI systems use machine learning algorithms to automatically detect dependencies and patterns in this data, which allows them to draw meaningful business conclusions. AI can be used to develop forecasting models that analyse historical data on demand for goods or services, as well as account for external factors such as economic conditions, changes in consumer behaviour, and market trends. This allows companies to reduce the risks of stock-outs and overstocks, and plan production and deliveries with greater accuracy and preparedness for market changes. AI is also used to assess risks in business processes, financial transactions, and decision-making (Davenport, 2018). The systems analyse information from various sources and address data history to identify potential risks and take the necessary measures to mitigate or avoid them.

Predictive analytics using machine learning models is a powerful tool that allows companies not only to respond to current market trends but also to predict future events and trends with high accuracy. Machine learning models for sales forecasting are based on the analysis of a

large amount of data about sales history, their dynamics and relationships with other factors, such as advertising campaigns, pricing, seasonality and economic conditions. Machine learning algorithms, such as regression models, neural networks, or ensemble methods, can be used to build predictive models that can accurately predict future sales volumes based on this data. This helps companies reduce the risk of overproduction or underproduction, optimise inventory, and plan production based on realistic demand forecasts. In marketing and sales, it is necessary to determine what factors influence consumer behaviour and purchase decisions. Machine learning models analyse large amounts of data about customers, their purchases, interests, demographics, and other important parameters. Based on this data, personalised predictive models can be developed to predict future customer actions, such as product preferences or responses to marketing campaigns. This allows companies to optimise communication strategies and offers for each customer, improving marketing efficiency and increasing conversions.

By analysing large volumes of market data, machine learning models can identify key trends and changes in consumer preferences, technology, or competitive strategies. This allows companies to adapt to market conditions, introduce new products or services in a timely manner, and respond to competition with effective strategies. Predictive models help reduce risks and increase competitiveness, enabling companies to maintain a strong market position (Fig. 1).

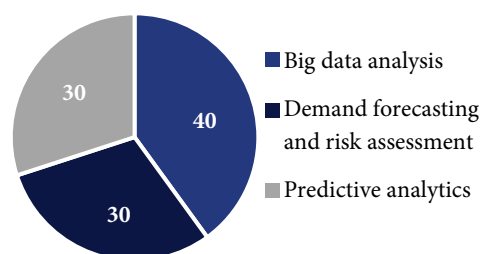


Figure 1. The role of AI in analytics and forecasting in international management
Source: created by the author based on M. Haenlein *et al.* (2019)

In the modern environment, HR management is actively using AI technologies to automate recruitment and candidate selection processes, which significantly reduces the influence of the human factor and increases the efficiency of these processes (Cam *et al.*, 2019). The main aspects in which AI is involved:

1. Automation of resume analysis. AI systems use natural language processing algorithms to analyse and classify candidates' CVs, automatically identify the key skills, experience and education that match the job.

2. Evaluation of candidates. AI creates predictive models based on historical data on successful employees and candidates, which objectively assess potential applicants for vacant positions.

3. Analysis of interview results. AI systems can analyse audio or text recordings of interviews to identify key points, assess candidates' communication skills, and ensure consistency in assessment.

These technologies significantly reduce the time needed for talent selection, enhance the accuracy of candidate assessments, and allow for more efficient use of human resources. Additionally, they open up new opportunities in personalised learning and development for companies seeking to improve their employees' knowledge and skills. The main advantage is the creation of adaptive learning platforms that utilise machine learning algorithms. These platforms analyse each employee's individual skills, progress, and preferences to suggest further learning steps that best meet personal needs. AI can also be used for automated assessment of learning outcomes, identifying weaknesses, and recommending further development. This enables faster adaptation of training programs to individual employee needs and improves learning effectiveness. Moreover, data analytics can identify key areas for developing necessary employee competencies and focus training programs on addressing specific challenges and goals of the company. These AI-based approaches to HR management help improve the level of knowledge and competencies of staff, which is critical to increasing the competitiveness and sustainability of organisations in today's business environment.

CRM uses AI to more accurately segment customers based on their behavioural data (Gartner: Magic quadrant..., 2022; Chatterjee & Chaudhuri, 2022). This is an important aspect of ensuring efficient and personalised customer interactions. CRM systems collect and analyse customer information from a variety of sources, including websites, social media, transactions, and customer communications. The use of AI allows for in-depth analysis of customer behavioural data to identify patterns and predict customer needs. This personalises communications by providing tailored offers, recommendations and services, which increases customer satisfaction and loyalty. AI-powered analytics in CRM also helps predict future customer behaviour, which contributes to more optimised sales strategies. Personalised advertising is used by companies to create individual approaches to each customer, which significantly improves the effectiveness of marketing campaigns. AI plays a key role in this context, enabling the automation of the analysis of large amounts of data about customers, their preferences, purchases, interests, and behaviour. With the help of machine learning and NLP algorithms, CRM systems can create detailed customer profiles, and analyse their online behaviour, reactions to advertising campaigns and other marketing influences. This allows not only to predict customer behaviour but also to create personalised offers that best suit their individual needs and interests. For instance, CRM systems can automatically recommend products or services that may be of interest to customers based on their previous purchases or browsing habits, personalise emails or social media posts with individual offers, and customise website interfaces for each visitor individually.

This approach increases the conversion rate of marketing campaigns, reduces losses due to misdirected communications, and makes customer interaction more effective.

AI-enhanced financial analytics plays an important role in modern financial management, enabling companies to analyse financial statements more accurately, forecast cash flows, and assess financial risks with high accuracy and efficiency. The main aspects of using AI in financial analytics include automating the processing of large amounts of financial data, such as accounting records, income statements, budgeting, and investment data (Schmitt, 2020). AI systems use machine learning algorithms to identify and analyse patterns in financial data, which allows them to identify trends, risks, and opportunities to optimise financial processes. AI-powered predictive models help managers forecast future cash flows and profits based on data history and other factors, such as economic conditions, changes in market conditions, and strategic decisions. This helps to avoid financial risks, increase the accuracy of planning and strategic decisions, and ensure the financial stability and growth of the company. Financial risk assessment using AI includes the analysis of information on credit risk, investment opportunities, and financial stability of counterparties and partners, as well as forecasting the impact of changes in the macroeconomic environment on the company's financial position. This helps managers make informed decisions on financial management and investment of resources to achieve the company's strategic goals (Fig. 2).

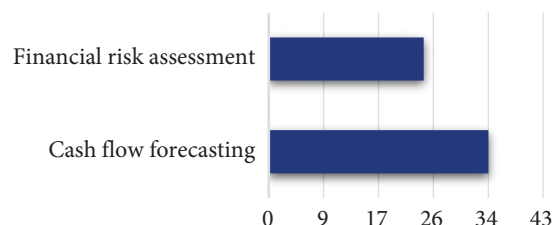


Figure 2. Application of AI in financial management in international management
Source: created by the author based on M. Hidayat *et al.* (2024)

AI-assisted accounting automation is a key trend in the modern business environment aimed at optimising processes, reducing errors, and improving the efficiency of financial management of an enterprise (AlKoheji & Al-Sartawi, 2022). AI is used to automate routine accounting operations, such as data entry, transaction classification, reporting, and financial data analysis. AI systems equipped with machine learning algorithms can independently recognise and process financial data, which significantly reduces the time required to perform accounting procedures and the cost of their maintenance. One of the key benefits of using AI in accounting is the reduction of the likelihood of human error. Machine learning algorithms can accurately analyse and interpret large amounts of financial data, and detect anomalies and errors in accounts, which can be used to quickly identify potential problems and take the necessary

measures to resolve them. In addition, the use of AI helps to increase the efficiency of accounting departments by automating internal processes, such as formulating financial forecasts, calculating tax liabilities, and controlling costs. This allows financial analysts and accountants to focus on strategic tasks and analysis instead of performing monotonous manual operations.

Enhancing cybersecurity is a crucial task for modern organisations, as threats in the digital world are becoming increasingly complex and multifaceted. Using AI to detect cyber threats and anomalous activity in real-time is becoming a key element of an effective cybersecurity strategy (Abdullahi *et al.*, 2022). The machine learning algorithms underlying AI systems can analyse huge amounts of data that are constantly coming from various sources, such as network logs, user activity data, server logs, and other sources of information. Through this analysis, AI can detect deviations from normal behaviour that may indicate the presence of cyber threats. This includes detecting unusual patterns of network access, abnormal changes in software, or unexpected activity that could be a sign of intrusion or malicious activity. One of the main advantages of using AI in cybersecurity is the ability to detect threats in real-time. This means that the system can immediately respond to potential threats by automatically taking measures to prevent or neutralise the threat. For example, the system can automatically block suspicious activity, isolate affected areas of the network, or send notifications to security administrators for immediate intervention. In addition, AI can learn from historical data and continuously improve its threat detection models. This means that the system is becoming increasingly accurate in detecting new types of threats and adapting to changes in attacker behaviour. As a result, companies can be better prepared for new cybersecurity challenges and respond more quickly to potential threats. Using AI to improve cybersecurity helps organisations reduce the risk of confidential information leakage, financial losses, and reputational damage. It can also significantly reduce cybersecurity costs, as the automation of threat detection and response processes reduces the need for manual labour and increases the effectiveness of security measures.

Data protection using AI is an important aspect of modern cybersecurity (Martinelli *et al.*, 2020). AI can be used for the automatic monitoring and analysis of large amounts of data in real-time, identifying suspicious activity and preventing potential threats. AI can detect abnormal behavioural patterns that may indicate attempts at unauthorised access to data or other types of cyberattacks. Machine learning algorithms analyse user and system behavioural data to detect any deviations from normal functioning. For example, if the system detects unusual activity with a user's account, such as access attempts from unusual locations or at unusual times, it can immediately block that access and notify the appropriate specialists for further investigation. AI is also used to detect and prevent phishing attacks. By analysing many emails and websites, AI systems can identify the telltale signs of phishing and block them before users

can become victims. This includes analysing text, URLs, and metadata to help identify fake or malicious resources.

AI can help prevent data breaches by analysing user and system activity to identify potential threats before they can cause damage. For example, AI systems can detect unauthorised copying or transfer of confidential data, proving quick response and data loss prevention. Thanks to their ability to learn, AI systems are constantly improving and becoming more effective in detecting and preventing new threats. They can analyse data from previous attacks and use this knowledge to predict and prevent future threats. This renders them substantial in the fight against cybercrime and ensuring high-level data protection. The use of AI to improve data protection and prevent cyberattacks is an important element of modern cybersecurity, enabling organisations to effectively protect their data and reduce the risk of cyber threats. The introduction of AI technologies in international management contributes to a significant increase in data privacy. Thanks to advanced encryption algorithms and anonymization methods, companies can more effectively protect the personal information of customers and partners. This allows them to comply with international data protection standards, such as the General Data Protection Regulation, and ensure a high level of trust in the company. One of the important results of ethical AI applications is the development and implementation of algorithms that minimise bias. Through regular audits and algorithm adjustments, companies can avoid discrimination based on gender, race, age, and other factors. This contributes to a fairer and more transparent decision-making process.

Companies implementing AI are actively working on the development of ethical data use policies. This includes informing customers about how their data is collected and used and obtaining consent to the processing of such data. Such approaches help to ensure that customer rights are respected and reduce the risk of ethical conflicts. The introduction of transparent algorithms is another important outcome of an ethical approach to AI. Companies are developing methods to explain the decisions made by algorithms, allowing users to understand how and why certain decisions were made. This increases the trust in AI technologies and contributes to the greater acceptance of these technologies in society. The introduction of AI in international management is accompanied by the development of responsibility and accountability mechanisms for the results obtained with the help of AI algorithms. Companies create internal ethics committees that control the use of AI and ensure compliance with ethical norms and standards. This helps to avoid negative consequences and ensures the responsible use of AI. Consideration of cultural peculiarities when implementing AI in international companies is an important aspect that contributes to the successful integration of technologies and ensures efficient operation on a global level. Intercultural differences affect various aspects of business, including communication, human resources, marketing strategies, and decision-making. Implementing AI requires taking these differences into account to ensure

that technologies are adapted to specific cultural contexts and avoid potential conflicts.

One of the key aspects is language adaptation. AI that works with text or voice information must consider the language differences and nuances of each country or region (Evelson, 2020). This includes translating and localising interfaces, analysing the tone and meaning of words, and considering language idioms and phrases. This ensures that information is understood and interpreted correctly and improves the quality of interaction with users from different cultural backgrounds. Cultural characteristics also affect the perception of technology and readiness to use it. Some cultures may have strong traditions and conservative views that affect the adoption of new technologies. Therefore, it is necessary to address cultural values and preferences when conducting relevant research and analysis. For example, the introduction of AI may require additional educational campaigns or training to raise awareness and readiness of staff to use new technologies. Human resources should also take cultural sensitivities into account when using AI. This includes adapting recruitment and selection algorithms to consider cultural nuances, as well as developing training and development models that consider different learning styles and cultural preferences. The use of AI in international companies also requires considering cultural differences in approaches to motivation, communication, and team management. Marketing strategies that use AI should also be adapted to the cultural characteristics of target markets. This includes personalisation of marketing messages, considering cultural preferences, customs, and traditions. For example, the use of AI to analyse consumer preferences and behaviour should consider different cultural contexts to ensure that marketing campaigns are relevant and effective.

DISCUSSION

This study examines in detail the implementation of AI in various aspects of business management at the international level. The use of AI in today's environment can significantly increase efficiency, reduce costs and improve the quality of tasks. AI can be used to automate routine business processes, including text recognition, classification and indexing of documents. This can significantly reduce the time required to process large amounts of information and improve the accuracy of analysis. Technologies such as NLP and OCR help automate document processing tasks (The Future of..., n.d.). Thanks to these technologies, companies can process information quickly and accurately, which increases labour productivity and reduces administration costs. Machine learning algorithms allow for forecasting demand for products and optimising stocks. This helps companies manage their supply chains more efficiently, reducing the risk of overstocking or shortages. For example, demand forecasting based on the analysis of sales history data and seasonal fluctuations allows for accurate production and delivery planning. This ensures optimal inventory management, which helps reduce costs and improve customer service.

K. Bhavsar *et al.* (2019) came to a similar conclusion that AI can significantly improve the efficiency of management processes in software projects. They emphasised that automating routine tasks such as monitoring project progress and managing risks can reduce errors and increase overall productivity. A.K. Namir *et al.* (2022) confirmed the importance of AI for inventory management, particularly through demand forecasting and inventory optimisation. They found that the use of machine learning and combinatorial optimisation allows for accurate production and supply planning, reducing the risk of overstocking or shortages. The study confirms that AI is used to optimise transport routes and automate processes in the supply chain. This helps to reduce delivery times, cut fuel costs, and improve overall logistics efficiency. In particular, the use of route optimisation algorithms allows for determining the fastest and most cost-effective routes for the delivery of goods. AI also helps automate the processing of customer requests using chatbots and virtual assistants. This ensures round-the-clock support, quick response to requests, and increased customer satisfaction. The use of chatbots allows processing many requests simultaneously, which significantly reduces the workload of the support team. R. Akerkar (2019) analysed the introduction of AI in supply chain management and logistics and found that the use of machine learning algorithms for demand forecasting helps companies plan production and supply more accurately, which reduces the risk of overstocking or shortages.

The ability of AI to quickly process and interpret complex data sets makes it indispensable for identifying trends, forecasting demand, and assessing risks. Similar conclusions were reached by V. Sohrabpour *et al.* (2021), who investigated the use of AI to forecast export sales. They found that AI can significantly improve the accuracy of export sales forecasts compared to traditional methods. The use of machine learning algorithms helps to analyse large amounts of data and identify patterns that affect sales. B. Hmoud (2021) explored the application of AI to business, focusing on how these technologies can be implemented to increase operational efficiency, optimise processes, and improve strategic management. The study found that AI technologies help in analysing large amounts of data and identifying trends and anomalies, which facilitates informed business decision-making and improves strategic planning.

M. Potwora *et al.* (2024) showed that AI helps automate routine marketing tasks such as content creation and distribution, advertising campaign management, and customer data processing, which increases efficiency and reduces costs. AI has a significant impact on marketing personalisation, allowing companies to create unique and targeted marketing campaigns for each customer. Using machine learning algorithms and big data analysis, AI can learn customer behavioural patterns, preferences, and purchase history. This ensures that personalised offers can be created that best meet the needs and expectations of each consumer. S. Lee's (2020) research on use of chatbots in

customer communication found that AI enables personalised interactions by providing tailored recommendations and solutions based on the analysis of previous interactions and customer preferences.

AI also plays an important role in financial analytics, providing more accurate and faster analyses of financial data. (Artificial intelligence in..., 2021). The use of machine learning and big data analytics algorithms allows companies to manage their finances more efficiently, identify trends and make informed decisions. One of the main applications of AI in financial analytics is forecasting financial indicators. Machine learning algorithms can analyse historical financial data and predict future revenues, expenses, and profits. This allows companies to better plan their budgets and determine optimal development strategies. J. Xu *et al.* (2024) investigated the use of AI technologies to predict and optimise risks in financial services. They found that AI-based technologies help to reduce financial losses through more accurate forecasting and early detection of risks, which allows for action to be taken before risks escalate into serious problems.

The use of artificial intelligence in cyber security and ethical and cultural management are important topics to consider in the context of the research topic. AI enables faster and more accurate detection of threats and anomalies thanks to machine learning algorithms and big data analysis. At the same time, ethical and cultural considerations must be taken into account when implementing it. Ethical issues include fairness, transparency and accountability in decision-making. It is important to ensure that algorithms are not biased and operate according to ethical standards. In a cultural context, AI technologies need to be adapted to different cultural characteristics, such as language barriers and social norms, to ensure their effectiveness and acceptability in different regions. A similar problem was studied by R. Trim & Y.-I. Lee (2022). They considered the possibility of combining sociocultural intelligence with AI to improve the cyber security of organizations. Sociocultural intelligence involves understanding the cultural and social factors that can influence user behaviour and potential threats. The results of their research showed that the combination of these two factors helps to increase the resilience of organizations to cyber threats.

Overall, the research results show that the use of artificial intelligence in international companies significantly enhances the efficiency of business processes. This is supported by numerous scientists in their studies. AI enables the automation of routine tasks, improves forecasting accuracy, and optimizes management decisions, leading to substantial cost reductions and increased productivity.

Additionally, the integration of AI promotes personalized customer service and enhances communication in a multicultural environment, helping companies better adapt to varying market conditions

CONCLUSIONS

The study showed that the automation of processes with the help of artificial intelligence significantly contributes to increasing the efficiency of the enterprise. The areas examined include document processing, inventory management, logistics, CRM, marketing, financial management, human resources, and cybersecurity. The study confirmed that cybersecurity is significantly strengthened by AI's ability to detect threats in real-time, detect anomalies and automatically respond to them, ensuring reliable data protection and reducing the risk of cyberattacks. The ability of AI to process large amounts of data facilitates trend analysis, demand forecasting and risk assessment, which facilitates informed decision-making in international management.

The study demonstrated that the ethical application of AI, including minimising bias, algorithmic transparency, and responsible use of data, is critical to maintaining trust and adherence to international standards. Considering cultural differences when implementing AI ensures effective global operations, from language adaptation to marketing strategies tailored to cultural contexts. The widespread use of AI in business process automation across various sectors demonstrates its key role in increasing efficiency, reducing costs, and improving the quality of tasks. The integration of AI technologies allows businesses to achieve competitive advantage, optimise resource utilisation, and increase overall productivity and efficiency in complex and rapidly changing market conditions.

Prospects for further research include the adaptation of AI to different cultural contexts, the study of ethical aspects of its use, and integration with other advanced technologies. Other important areas include the development of methods for training and adapting AI, its use in strategic and human resources management, enhancing cybersecurity, and developing new AI-based business models. The limitations of the study stem from the insufficient amount of data available for analysis and the difficulty of considering cultural differences in the use of AI technologies in different countries.

ACKNOWLEDGEMENTS

None.

CONFLICT OF INTEREST

None.

REFERENCES

- [1] Abdullahi, M., Baashar, Y., Alhussian, H., Alwadain, A., Aziz, N., Capretz, L., & Abdulkadir, S. (2022). Detecting cybersecurity attacks in internet of things using artificial intelligence methods: A systematic literature review. *Electronics*, 11(2), article number 198. [doi: 10.3390/electronics11020198](https://doi.org/10.3390/electronics11020198).
- [2] Akerkar, R. (2019). *Artificial intelligence for business*. Cham: Springer. [doi: 10.1007/978-3-319-97436-1](https://doi.org/10.1007/978-3-319-97436-1).

- [3] AlKoheji, A., & Al-Sartawi, A. (2022). Artificial intelligence and its impact on accounting systems. In A.M. Musleh Al-Sartawi, A. Razzaque & M.M. Kamal (Eds.), *From the Internet of Things to the Internet of Ideas: The role of artificial intelligence* (pp. 647-655). Cham: Springer. doi: 10.1007/978-3-031-17746-0_51.
- [4] Artar, M., Balcioglu, Y., & Erdil, O. (2022). *Use of artificial intelligence in human resources processes*. In *7th International zeugma conference on scientific research* (pp. 101-105). Gaziantep: Zeugma.
- [5] Artificial intelligence in financial services. (2021). Retrieved from <https://www.deloitte.com/ng/en/services/risk-advisory/services/how-artificial-intelligence-is-transforming-the-financial-services-industry.html>.
- [6] Barriga, M. (2019). *Artificial intelligence applied to marketing management: Trends and projections according to specialists*. (Master's dissertation, Lisbon university ISCTE Business School, Lisbon, Brazil).
- [7] Bhavsar, K., Shah, V., & Gopalan, S. (2019). Business process reengineering: A scope of automation in software project management using artificial intelligence. *International Journal of Engineering and Advanced Technology*, 9(2), 3589-3595. doi: 10.35940/ijeat.B2640.129219.
- [8] Cam, A., Chui, M., & Hall, B. (2019). *Global AI survey: AI proves its worth, but few scale impact*. Chicago: McKinsey.
- [9] Chatterjee, S., & Chaudhuri, R. (2022). Adoption of artificial intelligence integrated customer relationship management in organizations for sustainability. In D. Vrontis, A. Thrassou, Y. Weber, S. Shams, E. Tsoukatos & L. Efthymiou (Eds.), *Business under crisis* (pp. 137-156). Cham: Palgrave Macmillan. doi: 10.1007/978-3-030-76583-5_6.
- [10] Davenport, T.H. (2018). *The AI advantage: How to put the artificial intelligence revolution to work*. Cambridge: MIT Press. doi: 10.7551/mitpress/11781.001.0001.
- [11] Duan, Y., Edwards, J., & Dwivedi, Y. (2019). Artificial intelligence for decision making in the era of Big Data – Evolution, challenges and research agenda. *International Journal of Information Management*, 48, 63-71. doi: 10.1016/j.ijinfomgt.2019.01.021.
- [12] Evelson, B. (2020). *Key findings from the Forrester Wave™: AI-based text analytics platforms, Q2 2020*. Retrieved from <http://surl.li/wiqcvi>.
- [13] Gartner: Magic quadrant for data and analytics service providers. (2022). Retrieved from <https://www.deloitte.com/global/en/about/recognition/analyst-relations/magic-quadrant-for-data-and-analytics-service-2022.html>.
- [14] Gillis, A.S. (2006). *The ultimate question: Driving good profits and true growth*. Retrieved from <https://www.techtarget.com/searchcustomerexperience/definition/Net-Promoter-Score-NPS>.
- [15] Gonçalves, M. (2022). *The possibility of implementing intelligent systems and the respective impact of artificial intelligence on inventory management and warehousing*. (Master's dissertation, Lisbon university ISCTE Business School, Lisbon, Brazil).
- [16] Haenlein, M., Kaplan, A., Tan, C., & Zhang, P. (2019). Artificial intelligence (AI) and management analytics. *Journal of Management Analytics*, 6(4), 341-343. doi: 10.1080/23270012.2019.1699876.
- [17] Hidayat, M., Defitri, S.Y., & Hilman, H. (2024). The impact of artificial intelligence (AI) on financial management. *Management Studies and Business Journal*, 1(1), 123-129. doi: 10.62207/s298rx18.
- [18] Hmoud, B. (2021). *The adoption of artificial intelligence in human resource management and the role of human resources*. *Forum Scientiae Oeconomia*, 9(1), 105-118.
- [19] Jayawardena, N., Behl, A., Thaichon, P., & Quach, S. (2022). Artificial intelligence (AI)-based market intelligence and customer insights. In P. Thaichon & S. Quach (Eds.), *Artificial intelligence for marketing management* (pp. 120-141). London: Routledge. doi: 10.4324/9781003280392.
- [20] Lee, S. (2020). Chatbots and communication: The growing role of artificial intelligence in addressing and shaping customer needs. *Business Communication Research and Practice*, 2, 103-111. doi: 10.22682/bcrp.2020.3.2.103.
- [21] Martinelli, F., Marulli, F., Mercaldo, F., Marrone, S., & Santone, A. (2020). Enhanced privacy and data protection using natural language processing and artificial intelligence. In *International joint conference on neural networks (IJCNN)* (pp. 1-8). Glasgow: IEEE. doi: 10.1109/IJCNN48605.2020.9206801.
- [22] Meyer, C., Cohen, D., & Nair, S. (2020). From automats to algorithms: the automation of services using artificial intelligence. *Journal of Service Management*, 31(2), 145-161. doi: 10.1108/JOSM-05-2019-0161.
- [23] Naik, B., Mehta, A., Yagnik, H., & Shah, M. (2022). The impacts of artificial intelligence techniques in augmentation of cybersecurity: A comprehensive review. *Complex & Intelligent Systems*, 8, 1763-1780. doi: 10.1007/s40747-021-00494-8.
- [24] Namir, K., Labriji, H., & Lahmar, E. (2022). Decision support tool for dynamic inventory management using machine learning, time series and combinatorial optimization. *Procedia Computer Science*, 198, 423-428. doi: 10.1016/j.procs.2021.12.264.
- [25] Okhotnikova, O., & Okhotska, R. (2022). *Implementation of artificial intelligence in legal management: foreign experience*. In N. Lazarenko, V. Pylypchuk, A. Kolomiets, O. Yaremenko, V. Kononenko, O. Melnychuk, T. Kronivets, & S. Lapshyn (Eds.), *Proceedings of the First international scientific and practical conference "National and international law: history, present, and prospects for development"* (pp. 75-78). Vinnytsia: Vinnytsia Mykhailo Kotsiubynskyi State Pedagogical University.

- [26] Pan, Y., Froese, F., Liu, N., Hu, Y., & Ye, M. (2023). The adoption of artificial intelligence in employee recruitment: The influence of contextual factors. In A. Malik & P. Budhwar (Eds.), *Artificial intelligence and international HRM* (pp. 60-82). London: Routledge. [doi: 10.4324/9781003377085](https://doi.org/10.4324/9781003377085).
- [27] Piskun, A., & Sierov, M. (2023). Possibilities of application of artificial intelligence in management. *Scientific Innovations and Advanced Technologies*, 20(6), 75-82. [doi: 10.52058/2786-5274-2023-6\(20\)-75-82](https://doi.org/10.52058/2786-5274-2023-6(20)-75-82).
- [28] Potwora, M., Vdovichenko, O., Semchuk, D., Lipych, L., & Saienko, V. (2024). The use of artificial intelligence in marketing strategies: Automation, personalization and forecasting. *Journal of Management World*, 2, 41-49. [doi: 10.53935/jomw.v2024i2.275](https://doi.org/10.53935/jomw.v2024i2.275).
- [29] Schmitt, M. (2020). *Artificial intelligence in business analytics, capturing value with machine learning applications in financial services*. (Doctoral thesis, University of Strathclyde, Glasgow, Great Britain). [doi: 10.48730/5s00-jd45](https://doi.org/10.48730/5s00-jd45).
- [30] Sestino, A., & De Mauro, A. (2022). Leveraging artificial intelligence in business: Implications, applications and methods. *Technology Analysis & Strategic Management*, 34(1), 16-29. [doi: 10.1080/09537325.2021.1883583](https://doi.org/10.1080/09537325.2021.1883583).
- [31] Sharma, R., Shishodia, A., Gunasekaran, A., Min, H., & Munim, Z. (2022). The role of artificial intelligence in supply chain management: Mapping the territory. *International Journal of Production Research*, 60(24), 7527-7550. [doi: 10.1080/00207543.2022.2029611](https://doi.org/10.1080/00207543.2022.2029611).
- [32] Sohrabpour, V., Oghazi, P., Toorajipour, R., & Nazarpour, A. (2021). Export sales forecasting using artificial intelligence. *Technological Forecasting and Social Change*, 163, article number 120480. [doi: 10.1016/j.techfore.2020.120480](https://doi.org/10.1016/j.techfore.2020.120480).
- [33] The future of document automation. (n.d.). Retrieved from <https://www.fontoxml.com/the-future-of-documents/>.
- [34] Trim, P.R., & Lee, Y.-I. (2022). Combining sociocultural intelligence with artificial intelligence to increase organizational cyber security provision through enhanced resilience. *Big Data and Cognitive Computing*, 6(4), article number 110. [doi: 10.3390/bdcc6040110](https://doi.org/10.3390/bdcc6040110).
- [35] Xu, J., Wang, H., Zhong, Y., Qin, L., & Cheng, Q. (2024). Predict and optimize financial services risk using AI-driven technology. *Academic Journal of Science and Technology*, 10(1), 299-304. [doi: 10.54097/6zrqef25](https://doi.org/10.54097/6zrqef25).
- [36] Zadorozhna, I. (2022). [Prospects for the use of artificial intelligence in management](https://doi.org/10.1080/00207543.2022.2029611). *Student Bulletin of the National University of Water and Environmental Engineering*, 2(18), 47-50.
- [37] Zeadally, S., Adi, E., Baig, Z., & Khan, I. (2020). Harnessing artificial intelligence capabilities to improve cybersecurity. *IEEE Access*, 8, 23817-23837. [doi: 10.1109/ACCESS.2020.2968045](https://doi.org/10.1109/ACCESS.2020.2968045).

Технології штучного інтелекту в міжнародному менеджменті

Тетяна Айзенберг

Аспірант

Київський національний університет імені Тараса Шевченка

01033, вул. Володимирська, 60, м. Київ, Україна

<https://orcid.org/0009-0003-2389-9135>

Анотація. Мета роботи полягала в дослідженні ефективності використання штучного інтелекту (ШІ) і визначенні його впливу на управлінські процеси міжнародних компаній. Було створено методологію для оптимізації міжнародних бізнес-процесів, яка охопила впровадження ШІ для підвищення ефективності управління, автоматизації стратегічного планування, аналізу ринкових даних та прогнозування трендів. У роботі досліджено різноманітні аспекти застосування технологій ШІ в міжнародному менеджменті, охоплюючи ключові напрями, зокрема автоматизацію бізнес-процесів, обробку документів, управління запасами, логістику, комунікації з клієнтами, аналітику та прогнозування, а також управління персоналом. Автоматизація процесів дала змогу знизити витрати і покращити якість обслуговування. Використання алгоритмів машинного навчання у логістиці та управлінні запасами спростило прогнозування попиту і оптимізувало ланцюг поставок. Комунікацію з клієнтами було автоматизовано за допомогою роботів і чат-ботів, що покращило обслуговування. Аналітика та прогнозування на основі даних, зібраних та оброблених за допомогою ШІ, допомагають менеджерам приймати обґрунтовані рішення та ефективно планувати стратегії. Використання ШІ значно підвищило ефективність управлінських процесів. Ці технології допомагають компаніям швидше адаптуватися до змін на ринку і підвищувати свою конкурентоспроможність в глобальному бізнес-середовищі. Дослідження встановило, що здатність систем ШІ аналізувати великі обсяги даних, прогнозувати ринкові тенденції, автоматизувати рутинні завдання та зменшувати ризики прийняття рішень, дають змогу швидше реагувати на зміни на ринку, підвищувати точність стратегічного планування і забезпечувати високий рівень конкурентоспроможності в глобальному бізнес-середовищі. Практична цінність цього дослідження полягає в наданні підприємствам детального розуміння того, як інтегрувати ШІ у різні аспекти міжнародного менеджменту

Ключові слова: автоматизація процесів; алгоритми; оптимізація; бізнес-процеси; прогнозування попиту