

РОЗДІЛ 1. ЕКОНОМІКА

AR PROJECT MANAGEMENT IN E-COMMERCE: AUTOMATION OF SALES PROCESSES ON THE EXAMPLE OF AN ONLINE CLOTHING STORE AND PROSPECTS FOR AI UTILITY AND PLATFORM DEVELOPMENT

УПРАВЛІННЯ AR-ПРОЄКТАМИ В E-COMMERCE: АВТОМАТИЗАЦІЯ ПРОЦЕСІВ ПРОДАЖІВ НА ПРИКЛАДІ ОНЛАЙН-МАГАЗИНУ ОДЯГУ ТА ПЕРСПЕКТИВИ ВИКОРИСТАННЯ AI Й РОЗВИТКУ ПЛАТФОРМІЗАЦІЇ

The article examines how augmented reality (AR) and artificial intelligence (AI) technologies are changing the way online clothing stores operate and affecting the development of e-commerce. In particular, AR opens up new opportunities for customer interaction, for example, through virtual fittings, which helps customers to choose products more accurately. Such innovations help to improve the customer experience, increase the competitiveness of companies, and optimise business processes. AI is used to automate operations, personalise recommendations, analyse customer behaviour, and create effective marketing strategies. The article emphasises that the introduction of these technologies helps companies adapt to changes in consumer expectations and maintain business stability. Particular attention is paid to the analysis of the challenges that arise during the implementation of AR and AI, as well as their role in ensuring high-quality customer service and the development of e-commerce in Ukraine.

Keywords: project management, artificial intelligence, AR, e-commerce, processes of automation, digital technologies, personalisation, competitiveness.

UDC 005:338.3:336

DOI: <https://doi.org/10.32843/infrastruct81-1>

Bohoyavlenska Yuliia

Candidate of Economic Sciences,
Associate Professor,
Associate Professor at the Department
of Finance and Digital Economy,
Zhytomyr Polytechnic State University
Bilous Sofia
Master Students,
Zhytomyr Polytechnic State University
Khomenko Anastasiia
Master Students,
Zhytomyr Polytechnic State University

Богоявленська Ю.В.

Державний університет
«Житомирська політехніка»

Білоус С.Р.

Державний університет
«Житомирська політехніка»

Хоменко А.О.

Державний університет
«Житомирська політехніка»

Стаття аналізує використання інновацій у сфері електронної комерції, зокрема впровадження AR та AI для вдосконалення онлайн-продажів одягу. Особлива увага приділяється ролі технологій у трансформації бізнес-процесів, збереженні конкурентоспроможності компанії і адаптації до змін у поведінці споживачів. Доповнена реальність створює нові можливості для інтерактивності, дозволяючи клієнтам віртуально приміряти товари, що значно покращує досвід покупок і зменшує частоту повернень. У свою чергу, штучний інтелект автоматизує рутинні операції, генерує персоналізовані рекомендації, аналізує дані про клієнтів і підвищує ефективність маркетингових кампаній. Розглянуто сучасні приклади застосування AI, такі як чат-боти, прогнозування попиту, системи управління запасами й інструменти для поліпшення обслуговування клієнтів. Однак, поряд із перевагами, висвітлено й виклики інтеграції AR і AI, серед яких висока вартість впровадження, необхідність технічної експертизи та забезпечення кібербезпеки. Незважаючи на труднощі, ці технології стають стратегічними інструментами для розвитку компанії. Вони допомагають ефективніше використовувати ресурси, оптимізувати управління процесами та підвищувати клієнтоорієнтованість. Крім цього, важливо врахувати, що інтеграція AR і AI може сприяти формуванню нових стандартів у споживчій культурі, де швидкість обслуговування, точність пропозицій і гнучкість рішень визначатимуть лояльність клієнтів. Впровадження віртуальних примірок, інтерактивних вітрин і голосових помічників додає інноваційності в процеси продажу, розширюючи можливості брендів для залучення аудиторії. Такі технології також дозволяють аналізувати поведінкові дані покупців, надаючи бізнесу інструменти для вдосконалення персоналізованого підходу. У статті наголошено на перспективності AR і AI для розширення можливостей електронної комерції в умовах глобальної цифровізації. Успішна інтеграція цих інструментів забезпечує не лише адаптацію до сучасних викликів, а й створення конкурентних переваг на глобальному ринку. Особливу увагу приділено потенціалу цих технологій для розвитку українських онлайн-магазинів, які прагнуть зміцнити свої позиції та відповідати очікуванням сучасних споживачів.

Ключові слова: управління проєктами, штучний інтелект, AR, електронна комерція, автоматизація процесів, цифрові технології, персоналізація, конкурентоспроможність.

¹ The paper “AR project management in e-commerce: automation of sales processes on the example of an online clothing store and prospects for AI utility and platform development” has been developed within the framework of the project “Widen performance in research and innovation capacity and competence Across EU” / “WIDE AcrossEU” 101 158 561 Horizon Europe program. Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or European Research Executive Agency. Neither the European Union nor the granting authority can be held responsible for them.

² Статтю «Управління AR-проєктами в e-commerce: автоматизація процесів продажів на прикладі онлайн-магазину одягу та перспективи використання AI й розвитку платформізації» розроблено у рамках проєкту «Підвищення ефективності науково-інноваційного потенціалу та компетенцій в Європейському Союзі» / “WIDE AcrossEU” 101158561 програми «Горизонт Європа». Фінансується Європейським Союзом. Однак висловлені погляди та думки належать лише авторкам і не обов'язково відображають погляди Європейського Союзу або Європейського дослідницького виконавчого агентства. Ні Європейський Союз, ні орган, що надає грант, не можуть нести за них відповідальність.



Funded by
the European Union

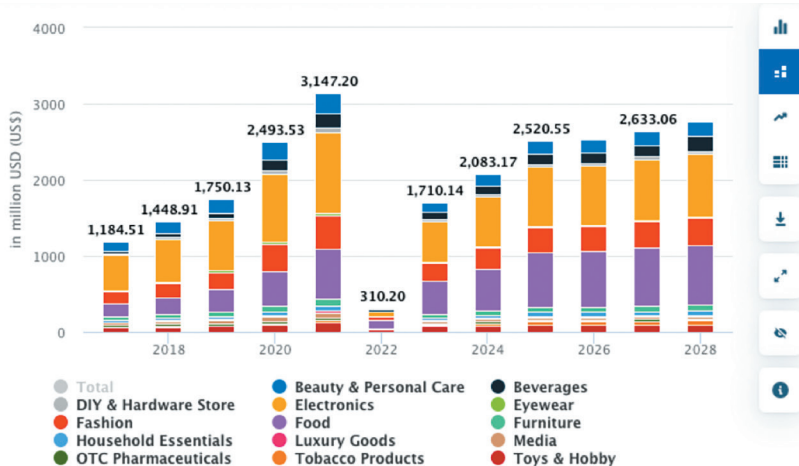
Problem statement. Electronic commerce (e-commerce) has gained considerable popularity in recent years, driven by the development of digital technologies and the growing demand for online shopping. Project management in e-commerce requires the adaptation of traditional methods to the specific conditions of this sector. One of the main challenges for online businesses is the efficient management of large volumes of data, orders, and customers. Automation of sales processes reduces the workload on staff, cuts costs, and minimises the risk of human error. In the case of online clothing stores, this allows you to quickly process orders, update product data in the warehouse, and set up personalised offers for customers. Automation is critical to improving business efficiency and scaling. Modern technologies, such as artificial intelligence (AI), machine learning (ML), and big data, are opening up new opportunities for automating business processes in e-commerce. The integration of these technologies allows businesses to analyse large amounts of data, forecast demand, improve supply chain management, and offer more relevant products to their customers. Innovations in this area create new opportunities for the development of online clothing stores and increase their competitiveness. The topic of AR project management in e-commerce with a focus on sales process automation is extremely relevant in today's environment. It covers not only technological aspects, but also the need for efficient resource management, adaptation to rapid market changes, and improvement of customer service. Automation is not just a tool, but a prerequisite for business success in the face of fierce competition and growing demand for online sales.

Analysis of the latest research and publications. Project management in the field of e-commerce has become one of the most actively researched

topics in recent years. In particular, in the works of such authors as A. Brown [1] and D. Hoffman [2], in the studies of A. Gomez [3] and M. Smith [4], M. Carnegie [5], J. Rodriguez [6], A. Parker [7], H. Lee [8], etc. The authors emphasise the importance of implementing modern technological solutions to improve business efficiency. Automation in online clothing stores can reduce the time spent on routine tasks, improve customer service, and optimise resource management. Studies also highlight the importance of flexible approaches to project management. At the same time, the issues of AR project management and methods of using AI to improve management efficiency, including marketing management, are not significantly represented. That is why the topic is relevant for disclosure.

The purpose of the article is to analyse and study effective approaches to project management in the field of e-commerce, in particular through the introduction of sales process automation. The article is aimed at studying methods and technologies that allow optimising the work of online clothing stores, increasing their productivity, cutting costs and improving customer interaction, developing proposals for the effective management of AR projects and identifying prospects for the use of AI.

Presentation of the main results. The war with the aggressor has become a huge challenge for our society and economy. The full-scale invasion has affected every sphere of Ukrainian life. Business, including e-commerce, has also been affected. Despite the challenges, many businesses managed to achieve record results in 2023. E-commerce has not only returned to pre-war levels, but has exceeded them. Before the war, the Ukrainian e-commerce market was growing steadily. This is confirmed by data from Statista (Fig. 1) [9].



Notes: Data shown is using current exchange rates and reflects market impacts of the Russia-Ukraine war.

Most recent update: Oct 2023

Source: Statista Market Insights

Figure. 1. Current exchange rates and the impact on the market during the russian-Ukrainian war

Source: [9]

In 2022, the market was expected to reach \$4 billion, but the war caused the lowest figure to be recorded – only \$300 million. Given the scale of Russian aggression, it was expected that it would take a long time to return to pre-war levels. However, the market began to recover rapidly, and in 2023, its volume reached \$1.7 billion. This suggests that the future of Ukrainian e-commerce will be positive. Consumers have changed their behavior due to the war in Ukraine. According to the World Bank, Ukraine’s GDP fell by 29.1 % in 2022. This has led to higher prices, lower incomes, and an increase in unemployment. People began to value other things, became more economical and cautious in their purchases. They buy less and prefer cheaper brands [9].

Ukrainians’ shopping decisions are influenced by several key aspects: first, the availability of goods, as consumers want to find and buy what they need quickly, especially for their daily needs, so stores should have a wide selection, regularly update their assortment and offer easy search. Secondly, ease of communication is important, as customers expect to be able to contact sellers quickly and get advice; information about products should be clear. Finally, fast and convenient delivery is important, as Ukrainians want their goods to be shipped quickly and with tracking capabilities, which gives companies an advantage over their competitors [9].

The fashion industry, which includes clothing, footwear and accessories, remains one of the most popular online categories, with several key trends emerging globally and in Ukraine (Figure 2). Personalisation is enabled by artificial intelligence, where data on customer behavior is used to tailor a personalised approach, and virtual fitting rooms and recommendation systems make it easier to choose products. Sustainability promotes transparent supply chains and the reuse of clothing, reducing the negative environmental impact of fashion. New technologies,

such as virtual and augmented reality, are opening up opportunities for interactive shopping, and blockchain is ensuring transparency in supply. Modern consumers are actively shaping the industry by demanding ethical and sustainable production. The growth of online sales continues, with online retailers and marketplaces offering a wide range of products and social media playing an important role in promoting and engaging customers.

Ukrainians continue to have a positive impact on global trends, particularly in fashion. Successful brands created by Ukrainians include: DRESSX, FINCH, FFFACE.ME, Vista Create, Augmented Pixels, Reface, V-Art, and 3DLook [11; 12].

In the field of online clothing sales, augmented reality (AR) opens up new opportunities for buyers and sellers. Virtual fitting rooms allow customers to “try on” clothes without leaving their homes. Using the camera of a smartphone or tablet, special AR apps help to visualise how certain items will look on the customer. Imagine going to an online clothing store. You see a T-shirt you like and click on the “Try on” button. Your smartphone camera activates, and you see yourself in the mirror, but wearing this T-shirt. You can turn around and bend over to see how the clothes fit. Implementing AR technologies in an online clothing store is a complex but promising process. It improves customer satisfaction and increases the likelihood of a purchase. However, for the successful implementation of an AR project, clear management stages are required. The first step is to determine what task the AR app will solve. For example, it could be helping customers choose the right size of clothes or style that suits them best. A clear understanding of the goal will help make the project more focused and effective. Next, you need to plan the project carefully. This includes developing a detailed plan with all the stages from app development to testing and launch. Planning will help ensure that each stage is completed

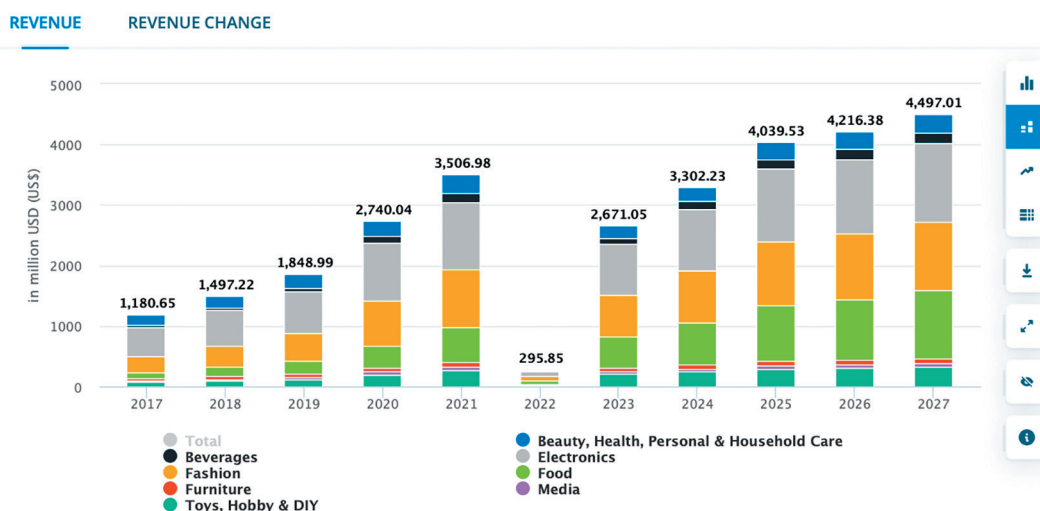


Figure 2. Results of online hypermarket research

Source: [10]

on time and without delays. Form a team of specialists to implement the project. You need specialists in application development, designers who can create an attractive interface, marketers for promotion, and 3D modellers to create virtual fittings. Working with professionals from different fields will ensure the high quality of the product. It is imperative to test the app on different devices and platforms to make sure it works stably. This is important so that customers can have a positive experience no matter what gadget they use. Finally, after launching the app, you need to collect analytical data on its usage. This will help you understand what works well and what needs to be improved. Studying customer behaviour will help make the app even more convenient and effective for users. The main principle of AR in this area is the combination of virtual clothing models with a real image of a customer. This allows users to immediately see how the chosen clothes will look on them, making the selection process more convenient and exciting. This increases the efficiency of project management in companies' operations. Online retailers such as Zara and ASOS have already implemented AR technologies, offering their customers the possibility of virtual try-on. This allows buyers to see how the clothes will look on them in advance, reducing the risk of size or style mismatch [13; 14].

Advantages of using AR in online clothing stores:

- 1) the customer sees how the clothes will look on them in real time;
- 2) the selection process becomes more interesting and personalised;
- 3) the number of returns due to the wrong size or style is reduced.

For example, some stores are introducing AR mirrors where customers can virtually "try on" new collections and instantly assess whether a particular style suits them. Such technologies not only simplify the buying process but also make it more interactive, which helps to increase customer loyalty and sales. Augmented reality can also be used to create interactive campaigns. For example, stores can launch an AR game where users collect virtual bonuses for purchases, which increases interest in the brand and stimulates purchasing activity [13; 14].

Artificial intelligence (AI) makes customer behaviour more predictable, which greatly helps marketers to better understand their audience. Thanks to AI, you can quickly find out which potential customers are most interested in products. For online clothing stores, this allows them to form target audiences faster and develop personalised offers for each customer group, which helps to increase sales. AI also helps to automate the marketing process. For example, AI tools can be used to launch advertising campaigns targeted to each subgroup of customers, which increases conversion rates. This allows you to run ads on various platforms, including social media,

search engines, and set up PPC ads, saving your team time and resources. In addition, artificial intelligence supports the team's creativity by generating new ideas for advertising campaigns and automating routine tasks. This allows marketers to focus on the creative aspects of their work, leaving analytics and technical implementation to AI. However, it is important to remember that even with the help of artificial intelligence, constant human control is required [15; 16].

While automation opens up new opportunities for online retailers, it's important to maintain a balance between technology and human interaction. Customers want to feel like they are interacting with people, not robots. If a customer notices excessive "artificiality" in messages or automated newsletters, it can cause distrust and drive them away. Therefore, AI marketing requires a careful approach to maintain an emotional connection with customers. Another challenge is ensuring data privacy. The ability of artificial intelligence to collect and analyse data raises the issue of security of user information. Online retailers should act in accordance with privacy rules, providing transparency in the use of personal data. This will help avoid risks and maintain customer trust [17].

The success of an online clothing store largely depends on effective interaction with customers, for which a CRM system is useful. It's important to define the goals of your CRM strategy, such as increasing sales or improving service, using the SMART principle. Next, you should collect and analyse data on sales, customer interaction, and team productivity, comparing sales reports before and after CRM implementation, and assess changes in average order value, processing time, and number of new customers. It is important to track how CRM affects communication (whether the number of repeat purchases and positive feedback has increased) and internal processes, checking for a reduction in order processing time and task management. Once you've set your KPIs, you should regularly evaluate progress and get feedback from employees who can provide valuable suggestions. Using CRM analytical tools will help you create reports and dashboards to track metrics, and calculating ROI will help you assess the return on investment in CRM. Constant monitoring and strategy adjustments will help your online store stay competitive and meet customer needs. Collecting and analysing customer data through CRM helps businesses make informed decisions, increase customer loyalty, and boost sales. You can collect demographic data (age, gender, place of residence, income level), contact information (email, phone number), purchase history (list of purchased goods, amount spent, frequency of purchases), and interaction with the company (contacting support, participating in promotions). Customer interests, such as hobbies and favourite brands, are also valuable.

To analyse the data, you should select key metrics (KPIs), segment customers for more accurate targeting, identify behavioural trends, and use analytical tools to predict future actions. For example, if customers aged 25–35 often buy dresses of a certain style, you can create an advertising campaign for this group, offering a new collection of dresses [18].

A chatbot is a virtual assistant that communicates with customers in an online clothing store using scripts and artificial intelligence technologies. Its main goals include increasing conversion from leads to customers, retaining existing customers, and reducing maintenance costs by automating processes. For example, a chatbot can answer questions about product sizes, colours, or availability, making the shopping experience more convenient. Chatbots perform many tasks, such as round-the-clock lead capture and qualification, collecting contact information, and informing about promotions. They can help customers choose clothes, introduce new collections, and remind them of loyalty programmes. A chatbot can also send bonuses and discounts, which encourages repeat purchases. In addition, chatbots can inform customers about the status of their orders, for example, when the goods have been sent or delivered. This reduces the number of customer support requests and increases customer satisfaction. Thanks to such features, online clothing stores can interact with customers more effectively and increase sales [19].

Instagram automation with software robots brings many benefits to an online clothing store. It helps you manage your account more efficiently and improve customer engagement, which in turn leads to better marketing results. With automation, you can respond to comments and questions faster, saving time for more important strategies. Instagram robots can quickly perform many tasks, such as publishing posts, responding to comments, and following users. This greatly increases productivity, as the number of actions that robots can perform is much greater than a human can. As a result, store employees can spend more time on strategic tasks. Automation also improves sales. For example, you can quickly process comments under posts with new products, which helps you interact more actively with subscribers and increase sales. Automation reduces the likelihood of human error, making communication with customers more professional. Triggered direct mail campaigns are another useful tool for keeping in touch with subscribers. These are automatic messages that are sent based on user actions, which allows you to create personalised responses. Such emails increase audience engagement and strengthen communication with them, which is important for the success of an online store [20].

Attracting new customers is an important stage for an online clothing store that helps to increase profits. When a store has a good loyalty programme, it

can lead to an increase in the average check. There are several types of such programmes. First, it is the accumulation of bonuses. For every hryvnia spent on a purchase, a customer receives points, which can then be exchanged for discounts or money. Secondly, discounts and promotions are popular in competitive niches, and they encourage customers to return. The third option is cashback, when part of the amount spent is returned to the customer's card. And finally, promotional codes, which allow you to get additional discounts when placing an order [21].

It is important to approach the creation of a loyalty programme individually. The store should choose the option that best suits its specifics. For example, an online clothing store can offer discounts on holidays to encourage customers to buy more. A bonus accumulation system will be especially useful for a store that sells clothes. Customers who often buy new items can accumulate points and receive discounts on future purchases. This encourages them to come back again.

Thus, as a result of the analysis and research of approaches to managing AR projects in the e-commerce sector, in particular through the introduction of sales process automation, the following main advantages have been identified:

1. Improved customer experience. AR technologies combined with AI allow customers to get a more interactive and personalised experience. Virtual fitting rooms, 3D product visualisations, and personalised recommendations make the shopping process more convenient and give customers more confidence when buying online.

2. Reducing the number of product returns. Thanks to the possibility of virtual try-on and accurate forecasting of customer needs, the number of returns can be significantly reduced. This saves store resources and increases customer satisfaction.

3. Automation of sales processes. Artificial intelligence can automate routine processes such as inventory management, product recommendations, market trend analysis, and order processing. This optimises costs and allows you to focus on strategic tasks.

4. Efficiency of marketing campaigns. AI in AR projects helps to better understand customer behaviour, which allows to create personalised marketing campaigns. This increases sales conversion and improves ROI (return on marketing investment).

5. Speed and accuracy of decision-making. Process automation with AI significantly speeds up the decision-making process at all stages of sales, from product selection to supply chain management. Demand forecasting helps to reduce the risk of overstocking or shortage of goods.

6. Reduced staff and management costs. AR projects with process automation can reduce staff costs, as many operations, such as customer

service, logistics, and inventory, can be performed automatically.

7. Competitive advantages. The introduction of AR and AI in e-commerce allows companies to stand out in the market through innovation. This helps to attract new customers and retain existing ones, which strengthens the business's position in the market.

8. Analytics and business process optimisation. AI is able to analyse huge amounts of data on customers, market trends, and operational efficiency. This allows to better understand customer needs and continuously improve business processes.

Automation of sales processes and the introduction of AR technologies in e-commerce significantly improve efficiency, reduce costs and create unique opportunities for customer engagement. These innovations allow companies to remain competitive and provide customers with modern solutions for convenient and secure online shopping.

At the same time, the risks in AR project management are:

1. Data privacy and security. One of the key risks is the threat to user data privacy. AI systems that work with personal data, such as purchase information or behavioural data, can become a target for cyberattacks or data leaks. This requires strict control and compliance with data protection laws.

2. Ethical issues and discrimination. AI systems can display certain forms of bias if model training is based on one-sided data. This can lead to discrimination based on gender, race, or age. For example, incorrect product recommendations or unfair pricing can affect certain groups of users. It is important to implement algorithms that take into account inclusivity and fairness.

3. Technical problems and errors in work. Automating sales processes with AI and AR requires a significant technical infrastructure. Connectivity issues, system failures, or poor algorithmic accuracy can lead to the loss of customers or a poorer shopping experience. This is especially critical for virtual fitting rooms, where the accuracy of 3D models directly affects customers' decisions.

4. Implementation costs. Integrating AR and AI into business requires significant investments, which can be economically risky, especially for small and medium-sized enterprises. The technical complexity of implementing such systems also requires qualified specialists, which can be difficult to find or train.

5. Legal regulation. The introduction of new technologies requires compliance with legal regulations. The absence of a regulatory framework for the use of AR and AI can create additional risks for businesses. Many countries do not yet have clear laws regulating the use of such technologies, which may lead to legal issues in the future.

Although AI and AR offer significant opportunities for growth and innovation in e-commerce, these risks

need to be carefully managed and constantly monitored [21].

The prospects for the use of AI are as follows:

1. Personalisation. AI can analyse a customer's previous purchases and search queries to recommend the most suitable products. This increases the probability that the customer will place an order. AI can also generate special offers and discounts, which makes customers more satisfied.

2. Marketing. AI helps to customise adverts so that they are shown only to those who may be interested in the product. This allows you to spend your advertising budget more efficiently. It also tracks how users behave on the website and helps marketers adjust strategies for better results.

3. Customer service. AI-driven chatbots are able to respond to customer queries around the clock, quickly solving simple problems. AI can also provide personalised assistance by analysing previous customer requests.

4. Website optimisation. Thanks to AI, website search becomes more accurate, which helps customers find the right product faster. It can also automatically select the best prices for goods by analysing the market and demand.

5. Logistics and inventory management. AI predicts which products will be the most popular, which allows you to replenish stocks in advance. It also helps to optimise delivery routes, which reduces costs and shortens the waiting time for orders.

6. Fraud protection. AI is able to analyse large amounts of data to detect suspicious transactions and prevent fraud [22].

The introduction of AI in online clothing stores significantly improves all stages of the process from customer acquisition to after-sales service, making businesses more competitive and adaptive to market needs.

The effectiveness of the implementation of modern deep technologies in marketing management is influenced by the following factors that are important to consider when determining the project management methodology:

1. Technical aspects. For AI to work well, it is important to use high-quality and large amounts of data to train models. It also requires powerful computers to process this data. New technologies should be easily combined with the company's existing systems. Particular attention should be paid to the protection of customers personal data to ensure its security.

2. Business aspects. First of all, you need to have a clear understanding of how new technologies will help achieve business goals. Employees should be ready to change and implement new tools. It is also important to allocate a sufficient budget to support and develop technologies. In addition, you should anticipate possible risks and prepare a plan to minimise them.

3. Marketing aspects. To successfully use AI, you need to know your target audience well, understand their needs and behaviour. The choice of technologies should be justified and meet specific marketing objectives. Finally, clear metrics should be established to assess the effectiveness of the implemented technologies.

In general, the use of deep technologies, including AI and AR, will allow to optimise the work of online clothing stores, increase their productivity, cut costs, and improve customer interaction.

Thus, we offer the following suggestions for effective AR project management and identification of AI application prospects:

1. Create a unique AR experience for each customer to make them feel that it was made especially for them;
2. Delegate boring, repetitive tasks to AI to free up more time for creative ideas;
3. Create AR applications that can 'see' and understand the environment in real time;
4. Use AI to create new visual effects and improve visual content in applications;
5. Use AI to better understand how users interact with AR applications.

AR project management becomes more efficient with the integration of AI, flexible approaches, and clear planning. The use of artificial intelligence can improve the functionality of augmented reality and provide a more adaptive and personalised experience for users.

Results and conclusions. The full-scale invasion has had a significant impact on all areas of Ukrainian life, including e-commerce. In 2022, the e-commerce market fell to \$300 million (the lowest figure), although it was expected to reach \$4 billion. Despite the difficulties, the market recovered to \$1.7 billion in 2023, indicating positive prospects. Changes in consumer habits require businesses to adapt and implement innovative solutions, such as augmented reality technologies, CRM systems, and communication automation. These changes are shaping new trends in the fashion industry and contributing to increased customer loyalty. Consumers have become more frugal and cautious in their purchases; the importance of product availability, ease of communication and fast delivery has increased. Despite the challenging conditions caused by the war, the Ukrainian e-commerce market has demonstrated significant resilience and adaptability. The introduction of the latest technologies, a focus on personalisation and improving the user experience, as well as the effective use of data and process automation are key factors for the success of online clothing retailers in Ukraine. These strategies not only help to restore the war performance, but also create the basis for further growth and development of the industry in the face of new challenges and opportunities. Instagram automation

with software robots significantly increases the efficiency of online clothing store management, improving customer experience and reducing the risk of errors. Quick response to comments and automated triggered email campaigns help to activate the audience and strengthen relationships with subscribers. Implementation of loyalty programmes, such as bonus points and cashback, encourages repeat purchases and increases the average check. As a result, the use of automation and customised customer acquisition strategies creates a favourable environment for sales growth and business development in a competitive market. Further growth prospects are associated with the introduction of new technologies and changes in consumer preferences. Sustainability and ethical production are among the key areas of focus, which is becoming increasingly important for new business models. AI and AR technologies allow creating interactive and personalised experiences, increasing customer loyalty and supporting market development. Thus, despite the challenges, e-commerce in Ukraine shows high potential for further development thanks to the automation of sales processes and the introduction of the latest technologies such as artificial intelligence (AI) and augmented reality (AR). AR project management and platformisation create new opportunities for online clothing stores, allowing them to increase efficiency, personalisation and interactivity in customer interactions. This ensures sustainable sales growth and adaptation to new market conditions.

Acknowledgement. The authors would like to thank Zhytomyr Polytechnic State University for the organizational support for this study. Special acknowledgement to the "WIDE AcrossEU" project's team, to the Horizon Europe program, to the European Union, European Research Executive Agency. This paper has been developed within the framework of the project "Widen performance in research and innovation capacity and competence Across EU" / "WIDE AcrossEU" 101 158 561 Horizon Europe program.

REFERENCES:

1. Yang Y., Brown L., Newmarch J., Lewis E. The W3 Trust Model: Transitivity of Trust in a Heterogeneous Web Environment. 5th Australian World Wide Web Conference (Southern Cross University, Lismore NSW 2480, Australia, 1999). Available at: <http://ausweb.scu.edu.au/aw99/papers/index.html>.
2. Hoffman D.L., Novak T.P. (2009). Flow Online: Lessons Learned and Future Prospects. *Journal of Interactive Marketing*, vol. 23(1), pp. 23–34.
3. Alves Gomez M., Maysen T. (2023) A Review of Customer Segmentation Techniques for Personalized Customer Targeting in E-Commerce Use Cases. *Information Systems and E-Business Management*, vol. 21(3), pp. 527–570. DOI: <https://doi.org/10.1007/s10257-023-00640-4>

4. Smith L.M., Kleine P.F. The Whole is More: Combining Qualitative and Quantitative Approaches in Evaluation Research, in *New Directions in Programme Evaluation*, ed. by D. Williams (Jossey Bass, Inc., San Francisco, CA, 1986), pp. 37–54.
5. Garcia M. (2021) Application of Carnegie principles in the digital age: an experimental study. *Computers in Human Behaviour*, vol. 115, 106612.
6. Rodriguez J., Smith A. (2019). The impact of artificial intelligence on e-commerce: a systematic review. *Journal of E-Commerce Research*, vol. 20(4), pp. 255–271.
7. Parker A., Johnson S. (2019) The impact of artificial intelligence on e-commerce user experience. *Journal of E-Commerce Research*, vol. 20(3), pp. 162–177.
8. RKK Fung and MKO Lee, EC-trust (e-commerce trust): A study of antecedent factors. 5th American Conference on Information Systems (Omnipress, Milwaukee, Wisconsin, 1999).
9. How the Ukrainian e-commerce market has changed and what awaits it in the future – Retail in Ukraine. (2024, January 30). Retail in Ukraine – UA-Retail.com. Available at: <https://ua-retail.com/2024/01/yak-zminivsia-ukrainskij-rinok-e-commerce-ta-shho-jogo-ochikuye-v-majbutnomu/>
10. Kopyshinsky, Yu. (2023). Rozetka is still the unchanged leader of Ukrainian e-commerce. But “Epicenter” is catching up. What is the life of the online sales market in Ukraine. Research by digital marketer Yury Kopyshynsky – Forbes.ua. Business, billionaires, news, finance, investments, companies. Available at: <https://forbes.ua/money/rozetka-poki-nezminniy-lider-ukrainskogo-e-komersale-epitsentr-nazdoganyae-chim-zhive-rinok-onayn-prodazhiv-v-ukraini-doslidzhennya-didzhital-marketologa-yuriya-kopishinskogo-29092023-16357>
11. Krzysztof Oflakowski. (2023). This year, 2.4 billion buyers will be interested in products from the fashion industry sold on the Internet. This is good news, but there is one caveat. Available at: <https://trans.info/ua/ts-oho-roku-tovaramy-z-industriymody-shcho-prodayut-sya-v-interneti-zatsikavyt-sya-2-4-mlrd-pokuptsiv-367253>
12. Mykola Derkach. (2024). Digitization of the fashion sphere: the contribution of Ukrainians to the global trend. PaySpace Magazine. Available at: <https://psm7.com/uk/business/didzhitalizacziya-sferimodi-vklad-ukrayincziv-u-globalnij-trend.html>
13. The role of AI in the optimization and personalization of e-commerce: studies and cases of the Ukrainian CDP eSputnik. (2024). Association of Retailers of Ukraine – The profile association of retail market players. Available at: <https://rau.ua/novyni/novini-partneriv/cdp-esputnik/>
14. What is a virtual fitting room online and how to use it? (b. d.). LookSize. Available at: <https://www.looksize.com/ua/blog/shcho-take-virtualjna-prymirochna>
15. Augmented reality. AR technology as an effective marketing tool. (2022, June 26). Apix-Drive. Available at: <https://apix-drive.com/ua/blog/marketing/dopovnenarealist-efektivnij-instrument-marketingu#kak-arpomogaet-prodvi-gat-produkt>
16. Using AI in 2024: Key Opportunities, Advantages and Disadvantages for Marketers – Genius.Space. (2024). Available at: <https://genius.space/lab/vikoristannya-ai-v-2024-osnovni-mozhливosti-perevagiv-ta-nedoliki-dlya-marketologiv/>
17. Artificial intelligence for online stores: what functionality it can offer – VOLL Blog. (2024). VOLL Web Studio – Internet Marketing Agency. Available at: <https://voll.com.ua/uk/blog/shtuchnij-intelekt-dlya-internet-magaziniv-yakij-funktional-mozhezaproponuvati>
18. Step by step: how to analyze the results of a CRM strategy. (2024). LP-CRM. Available at: <https://blog.lp-crm.biz/uk/crm-system/krok-za-krokom-kak-provesti-analiz-rezultatov-crm-strategii/>
19. Maria Kashina. (2024). Chatbots for various business needs: recommendations of Promodo experts. Promodo. Available at: <https://www.promodo.ua/blog/chat-boti-dlya-riznih-potreb-biznesu-rekomendaciyifahivciv-promodo>
20. How will automation revolutionize your social media business? (2023). Autopad. Available at: <https://it-rating.ua/news-3671>
21. Loyalty programs as a retention marketing tool: effective strategies for attracting and retaining customers in small businesses. (2024). The Easy Way to Hire an Internet Marketing Specialist. Available at: <https://www.justwork.team/blog/efektivni-strategiyi-dlyazaluchennya-ta-utrimannya-kliientiv>
22. Jack M. Germain. (2024). The Risks and Rewards of AI Adoption in Retail. E-Commerce Times. Available at: <https://www.ecommercetimes.com/story/the-risks-and-rewards-of-i-adoption-in-retail-177952.html>