# RESEARCH ON AI-BASED CUSTOMER SERVICE AND SALES PROMOTION MECHANISMS IN E-COMMERCE PLATFORMS UNDER THE CONDITIONS OF UZBEKISTAN

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**Annotation:** *This thesis investigates mechanisms for improving customer service and stimulating sales through artificial intelligence technologies in e-commerce platforms operating in Uzbekistan. The study analyzes the potential of artificial intelligence in establishing rapid communication with customers, identifying their needs, generating personalized offers, and simplifying the purchasing process. The research takes into account the development characteristics of Uzbekistan's e-commerce market, the expansion of marketplaces and social-commerce channels, and the growing demand for digital customer services.*

**Keywords:** *artificial intelligence, e-commerce, AI chatbot, customer service, sales promotion, personalization, recommendation system, conversion rate, digital marketing, Uzbekistan.*

**Аннотация:** *В данной тезисной работе исследуются механизмы совершенствования обслуживания клиентов и стимулирования продаж с использованием технологий искусственного интеллекта на платформах электронной коммерции, функционирующих в Узбекистане. В исследовании анализируются возможности искусственного интеллекта в обеспечении оперативного взаимодействия с клиентами, выявлении их потребностей, формировании персонализированных предложений и упрощении процесса покупки. Также учитываются особенности развития рынка электронной коммерции Узбекистана, расширение маркетплейсов и каналов социальной коммерции, а также растущий спрос клиентов на цифровые услуги.*

**Ключевые слова:** *искусственный интеллект, электронная коммерция, AI-чат-бот, обслуживание клиентов, стимулирование продаж, персонализация, рекомендательная система, коэффициент конверсии, цифровой маркетинг, Узбекистан.*

**Annotatsiya:** *Ushbu tezis O‘zbekistonda faoliyat yuritayotgan elektron tijorat platformalarida sun’iy intellekt texnologiyalari orqali mijozlarga xizmat ko‘rsatishni takomillashtirish va sotuvlarni rag‘batlantirish mexanizmlarini tadqiq etadi. Tadqiqotda mijozlar bilan tezkor aloqa o‘rnatish, ularning ehtiyojlarini aniqlash, shaxsiylashtirilgan takliflarni shakllantirish va xarid jarayonini soddalashtirishda sun’iy intellektning imkoniyatlari tahlil qilinadi. Shuningdek, O‘zbekiston elektron tijorat bozorining rivojlanish xususiyatlari, marketplace va ijtimoiy tijorat kanallarining kengayishi hamda mijozlarning raqamli xizmatlarga bo‘lgan talabining ortib borishi hisobga olinadi.*

**Kalit so‘zlar:** *sun’iy intellekt, elektron tijorat, AI-chatbot, mijozlarga xizmat ko‘rsatish, sotuvlarni rag‘batlantirish, personalizatsiya, tavsiya tizimi, konversiya darajasi, raqamli marketing, O‘zbekiston.*

The rapid development of the digital economy is transforming the structure and mechanisms of modern trade. Electronic commerce has become an important component of the digital economy because it enables businesses to reach consumers without traditional geographical limitations, reduce transaction barriers, collect large amounts of behavioral data, and provide services through multiple digital channels. At the same time, the increasing number of online businesses and digital marketplaces creates new requirements for customer service and sales management.

Modern consumers expect more than simply access to products. They expect immediate responses to questions, accurate information about products, convenient payment and delivery options, personalized recommendations, and quick solutions to problems arising during or after the purchasing process. Consequently, the quality of customer service has become one of the important determinants of competitiveness in e-commerce.

Artificial intelligence provides new opportunities to address these challenges. AI chatbots can answer frequently asked questions, provide product information, assist customers in choosing products, track orders, and automatically process routine requests. Machine learning algorithms can analyze customer behavior and identify purchasing patterns, while recommendation systems can generate personalized offers based on previous interactions and transactions.

This issue is particularly relevant to Uzbekistan because the domestic e-commerce market has been expanding rapidly. Information reported by the National Agency of Perspective Projects indicates that online sales in Uzbekistan reached approximately 22.7 trillion soums in 2025, while the number of e-commerce platforms increased from 36 in 2024 to 115 in 2025. The share of e-commerce in total retail trade also increased to approximately 4.6 percent. These developments indicate that the digital market is becoming increasingly competitive and that businesses need to improve not only their products and prices but also the quality and speed of customer interaction.

AI-based systems can eliminate some of these limitations. An AI chatbot can communicate with many customers simultaneously, operate twenty-four hours a day, and provide standardized information. More advanced systems can understand natural-language questions and determine the likely intention of the customer.

The economic role of an AI chatbot therefore extends beyond answering questions. A customer who receives an immediate and useful answer is more likely to continue the purchasing process. Thus, service speed can indirectly affect sales conversion.

Another important function is product recommendation. Artificial intelligence can analyze previous purchases, product views, search behavior, cart additions, and other interaction data to identify products that may be relevant to an individual consumer.

Sales promotion refers to activities designed to increase the probability and frequency of customer purchases. In e-commerce, these activities include personalized discounts, product recommendations, reminder messages, loyalty incentives, cross-selling, up-selling, and promotional campaigns.

Artificial intelligence makes it possible to determine which customers are most likely to respond to particular incentives. This is especially important because providing the same discount to every customer is not always economically efficient.

For example, a customer who frequently purchases from a platform may not require a large discount to make another purchase, while an inactive customer might respond positively to a limited promotional offer. AI can estimate the probability of purchase and determine which type of incentive is more appropriate.

One of the most important applications is personalized recommendation. Recommendation systems use customer and product data to predict which products are likely to be of interest to a particular user. These systems can be based on collaborative filtering, content-based methods, deep learning, or hybrid approaches.

Artificial intelligence can also improve cross-selling and up-selling. Cross-selling involves recommending complementary products, while up-selling involves suggesting a higher-value alternative. In both cases, AI can estimate which offer has the greatest probability of being accepted.

The application of AI in Uzbekistan must take into account the specific structure and development stage of the national e-commerce market. The rapid growth in the number of digital platforms indicates increasing competition for customers. As online alternatives expand, consumers can compare products, prices, service quality, delivery terms, and customer reviews more easily.

The 2025 expansion of e-commerce platforms to 115 from 36 in 2024 represents an important structural change. The increase suggests that businesses are entering the online market at a faster rate and that consumers are gaining more alternatives. Under such circumstances, customer experience can become an important source of competitive advantage.

The Uzbek market also has a distinctive communication environment. Many consumers interact with businesses through social networks and messaging applications in addition to dedicated websites and marketplaces. Telegram, Instagram, mobile applications, and other digital channels can form part of the consumer journey.

The methodological approach of this research is based on a combination of systems analysis, comparative analysis, customer segmentation, economic efficiency assessment, and evaluation of AI technologies.

The research conceptualizes the customer journey as a continuous process consisting of customer acquisition, communication, need identification, product recommendation, purchase completion, post-purchase service, and repeat-purchase stimulation.

At each stage, AI can perform specific functions. During the initial stage, AI can analyze customer behavior and provide relevant product information. During the communication stage,

an AI chatbot can answer questions and identify the customer's needs. During the product-selection stage, recommendation algorithms can suggest suitable alternatives. After the purchase, AI can provide delivery updates, collect feedback, recommend complementary products, and encourage repeat purchases.

The performance of AI-based customer service can be assessed through response time, the proportion of inquiries resolved automatically, customer satisfaction, and the rate at which service interactions result in purchases.

Sales promotion effectiveness can be assessed through conversion rate, average order value, repeat purchase rate, customer acquisition cost, customer retention, and customer lifetime value.

The rapid development of e-commerce in Uzbekistan increases the potential value of automated customer service. As transaction volumes grow, businesses face increasing numbers of customer inquiries concerning product availability, price, delivery, warranty, payment, returns, and product characteristics.

AI chatbots can process such questions automatically. This can reduce the workload of human operators while ensuring continuous service availability.

The economic benefit can be particularly significant for small and medium-sized businesses. A small online retailer may not have the financial capacity to maintain a large customer-support team. By implementing a chatbot, the business can process a larger number of customer inquiries without proportionally increasing labor costs.

However, the quality of the AI system is critical. A poorly designed chatbot that provides irrelevant or incorrect information can have the opposite effect by reducing consumer trust and increasing customer frustration.

Personalization is one of the most important mechanisms through which AI can stimulate sales. The traditional approach to marketing often involves showing the same promotion to large groups of customers. Artificial intelligence allows businesses to tailor communication according to individual preferences and behavior.

A customer who frequently purchases premium products may respond differently to promotional messages than a customer who primarily purchases discounted products. Similarly, a new customer may need broader product information, whereas an existing customer may benefit more from a personalized loyalty offer.

By analyzing behavioral patterns, AI can determine when a customer is most likely to engage with an offer.

The proposed mechanisms can be applied across many sectors of Uzbekistan's e-commerce economy, including fashion, cosmetics, electronics, household goods, food delivery, tourism-related services, and other consumer markets.

An online cosmetics retailer, for example, can use an AI assistant to identify a customer's needs, recommend suitable products, answer questions about ingredients or usage, and propose complementary products. After the purchase, the system can provide usage instructions and later recommend replenishment when the likely repurchase period approaches.

An online fashion retailer can use AI to assist customers with product selection, recommend combinations of clothing items, provide size-related assistance, and notify customers of products that match their previous purchasing behavior.

Despite its potential benefits, AI-based customer service has several limitations. One of the most important challenges is data quality. AI models depend on reliable information about products, customers, transactions, and interactions. Incomplete or outdated information can result in incorrect recommendations.

Another challenge concerns human resources. Businesses need specialists who can configure AI systems, monitor their performance, update knowledge bases, and evaluate outcomes.

The protection of personal data is also essential. Personalization requires the processing of customer-related information, which means that businesses must ensure appropriate security and lawful data handling.

The development of electronic commerce in Uzbekistan requires new mechanisms for improving customer service and stimulating sales. Increasing competition among marketplaces and digital sellers means that businesses can no longer rely solely on product availability and price. The quality, speed, personalization, and convenience of customer interaction are becoming increasingly important components of competitiveness.

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