DOI: http://doi.org/10.31617/1.2026(168)08
UDC 004.8:659.1]:739.2=111

CHUNIKHINA Tetyana

https://orcid.org/0000-0002-1386-6706

PhD (Economics), Associate Professor,
Associate Professor of the Department of Marketing
State University of Trade and Economics
19, Kyoto St., Kyiv, 02156, Ukraine

t.chunihina@knute.edu.ua

CHISTIAKOVA Sofiia

https://orcid.org/0009-0002-2088-8564

Social Media Manager
and Graphic Designer,
Lama Academy (USA)
10625, Penny Rd., Cary,
NC, 27518, USA

sofichi26@gmail.com

AI-ADVERTISING IN JEWELRY RETAIL

The rapid growth of the artificial intelligence (AI) market in e-commerce and the simultaneous inability of most companies to move from localized experiments to the systematic integration of AI solutions underscore the relevance of this study. For jewellery retail, this contradiction takes on particular significance due to the specifics of the premium segment–high buyer emotional engagement, the critical role of visual aesthetics, and the brand's reputational vulnerability–which significantly limit the possibilities for full automation of marketing processes. The study is based on the hypothesis that the maximum marketing effect in jewellery retail is achieved not through total algorithmizing, but through a strategically structured division of functions between humans and artificial intelligence (AI) in accordance with the nature of the specific task. The methodological foundation of this work consists of a systematic analysis and synthesis of the results of field experiments and industry analytical reports by McKinsey and Gartner, as well as publications in peer-reviewed international journals from 2021 to 2026. The study found that the effectiveness of AI in marketing is asymmetrical: algorithms consistently outperform humans in generating text content and performing analytical tasks but fall short when it comes to creating visually appealing materials,

ЧУНІХІНА Тетяна

https://orcid.org/0000-0002-1386-6706

к. е. н., доцент, доцент кафедри маркетингу
Державного торговельно-економічного
університету
вул. Кіото, 19, м. Київ, 02156, Україна

t.chunihina@knute.edu.ua

ЧІСТЯКОВА Софія

https://orcid.org/0009-0002-2088-8564

менеджер із соціальних мереж
та графічний дизайнер,
Академія Лама (США)
Пенні Рд., 10625, Кері,
Північна Кароліна, 27518, США

sofichi26@gmail.com

ШІ-РЕКЛАМА В ЮВЕЛІРНОМУ РИТЕЙЛІ

Стрімке зростання ринку штучного інтелекту (ШІ) в електронній комерції та одночасна нездатність більшості підприємств перейти від локальних експериментів до системної інтеграції ШІ-рішень визначають актуальність дослідження. Для ювелірного ритейлу ця суперечність набуває особливого значення через специфіку преміального сегмента, високу емоційну залученість покупця, критичну роль візуальної естетики та репутаційну вразливість бренду, що суттєво обмежує можливості повної автоматизації маркетингових процесів. Висунуто гіпотезу, що максимальний маркетинговий ефект у ювелірному ритейлі досягається не через тотальну алгоритмізацію, а через стратегічно структурований розподіл функцій між людиною та штучним інтелектом відповідно до природи конкретного завдання. Методологічну основу дослідження становлять системний аналіз і синтез результатів польових експериментів та галузевих аналітичних звітів McKinsey та Gartner, а також публікацій у рецензованих міжнародних виданнях за 2021–2026 рр. У ході дослідження встановлено, що ефективність ШІ в маркетингу є асиметричною: алгоритми стабільно перевершують людину у генерації текстового контенту та аналітичних завданнях, проте поступаються їй у створенні візуально-естетичних

which is a decisive factor in jewellery advertising. Specific threats to the industry were also identified: content homogenization, risks of personal data leaks, algorithmic "hallucinations", and legal uncertainty in the field of intellectual property. Based on the study's findings, the author developed the Intelligent Symbiosis Marketing Framework (ISMF), a conceptual model that operationalises the "Human-in-the-loop" principles and the "Centaur" behavioural pattern in the context of jewellery retail. The model defines criteria for task distribution between humans and algorithms and provides for the institutionalisation of validation protocols to preserve the brand's unique identity.

Keywords: artificial intelligence, jewellery retail, digitalisation of advertising, technological inflexion point, hybrid model, marketing.

матеріалів, що є визначальним чинником для ювелірної реклами. Виявлено також специфічні загрози галузі: гомогенізація контенту, ризики витоку персональних даних, алгоритмічні "галюцинації" та правова невизначеність у сфері інтелектуальної власності. За результатами дослідження розроблено авторську концептуальну модель Intelligent Symbiosis Marketing Framework (ISMF), що операціоналізує принципи "Human-in-the-loop" та поведінкового патерну "Кентавра" стосовно специфіки ювелірного ритейлу. Модель визначає критерії розподілу завдань між людиною та алгоритмом і передбачає інституціоналізацію валідаційних протоколів для збереження унікальної ідентичності бренду.

Ключові слова: штучний інтелект, ювелірний ритейл, цифровізація реклами, зубчастий технологічний рубіж, гібридна модель, маркетинг.

JEL Classification: M37, M31, O33.

Introduction

The digital transformation of retail, which has intensified over the past decade, is acquiring a qualitatively new dimension with the proliferation of artificial intelligence (AI) technologies. While earlier digitalisation in retail primarily focused on migrating traditional business processes to the online environment, today the focus has shifted toward a fundamental reconfiguration of the very logic of value creation. Jewellery retail, as a segment characterised by high levels of emotional consumer involvement and the critical role of brand trust, finds itself at the epicentre of these shifts. AI technologies simultaneously offer significant opportunities for this sector while generating specific risks not inherent to the mass consumer market.

The relevance of this study is driven by the contradiction between the rapid growth of the AI market in e-commerce, from USD 9.01 billion in 2025 to a projected USD 74.93 billion by 2035 Zoting (2026) and the systemic inability of most enterprises to transition from localised experiments to the full integration of intelligent systems into the corporate operating model. According to Khandabattu (2025) data, generative AI is currently in the "Trough of Disillusionment" phase, where initial enthusiasm gives way to difficulties in justifying real return on investment (ROI). For the jewellery industry, this issue is particularly acute: any algorithmic error in the factual description of a product or its visualisation can cause irreversible reputational damage, making the issue of deliberate and structured AI integration critical for this specific segment.

The scholarly discussion regarding AI effectiveness in marketing processes is evolving along several lines. Singla et al. (2025) demonstrates that high-performing organisations achieve economic impact from AI not through point automation but via a fundamental redesign of workflows, viewing the technology as a new operating core rather than an add-on to an

existing model. Ju and Aral (2026), in large-scale field experiments, quantitatively investigated the impact of autonomous AI agents on marketer productivity and the structure of intra-team interaction. Dell'Acqua et al. (2026) proposed the concept of the "jagged technological frontier," describing the asymmetric nature of current AI system competence, which allows for predicting tasks where algorithms outperform humans and those where they fall short. The risks of content homogenization stemming from the excessive delegation of creative functions to algorithms were explored by Padmakumar and He (2024). The legal and ethical dimensions of using generative models in commercial communications were analysed by Singla et al. (2025) and Romanchuk et al. (2024). The specifics of visual marketing in the jewellery industry and its impact on behavioural metrics of advertising campaigns were examined by Kobets (2021). Nevertheless, the existing literature lacks an integrated model that systematically combines these aspects specific to jewellery retail and proposes an operationalised mechanism for the distribution of functions between humans and algorithms. Addressing this gap constitutes the scholarly problem that the present study aims to resolve.

The objective of this article is to develop a conceptual hybrid model to organise the marketing activities of a jewellery enterprise, based on the principles of intelligent symbiosis between humans and artificial intelligence. To achieve this goal, the following tasks are addressed: analysing the current state and challenges of AI scaling in e-commerce and outlining the specifics of its application in jewellery marketing; evaluating AI effectiveness in creating various types of advertising content through the lens of the "jagged frontier" concept; systematizing the specific threats of AI utilization in jewellery retail marketing; and justifying and describing the original "Intelligent Symbiosis Marketing Framework" (ISMF) by defining criteria for the distribution of functions between humans and algorithms.

The study is based on the hypothesis that maximum marketing effect in jewellery retail is achieved not through full automation, but through a strategically structured distribution of functions between humans and algorithms according to the nature of the specific task, its creative complexity, the risk of error, and the degree of emotional weight for the consumer. The information base of the study includes field experiment results, industry analytical reports from leading consulting firms such as McKinsey and Gartner, and peer-reviewed international journal publications from 2021 to 2026. The methodological foundation comprises systems analysis, synthesis of existing empirical data, and conceptual modelling. A limitation of the study is its theoretical and conceptual nature: the proposed ISMF model requires further empirical verification on a representative sample of jewellery enterprises.

The article is structured as follows. The first section analyses the current state of the AI market in e-commerce, the challenges of its scaling, and the specifics of its application in jewellery retail marketing. The second

section is devoted to evaluating AI's impact on marketer productivity and analysing the "jagged frontier" concept in the context of the visual specifics of jewellery advertising. The third section systematises the threats and challenges of AI implementation characteristic of the premium segment. The fourth section describes the original ISMF hybrid model, outlines the criteria for task distribution between humans and algorithms, and discusses the proposed approach's limitations.

1. The current state and challenges of scaling AI in the e-commerce market

E-commerce in general, and jewellery retail in particular, are currently undergoing a stage of profound transformation driven by the widespread implementation of artificial intelligence (AI) technologies. Market dynamics confirm the scale of this shift. According to global estimates by Zoting (2026), the AI market volume in e-commerce stood at USD 9.01 billion in 2025 and is projected to reach USD 74.93 billion by 2035, representing a compound annual growth rate (CAGR) of 23.59% (*Figure 1*).

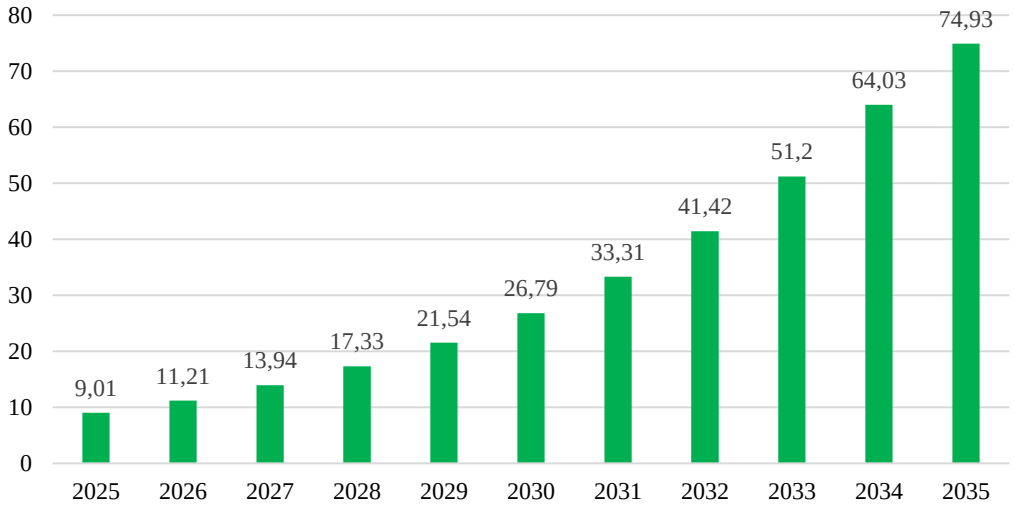

Figure 1. Artificial Intelligence in the e-commerce market size 2025 to 2035 (USD billion)

Source: compiled by the authors based on (Zoting, 2026).

Such dynamics demonstrate a qualitative shift in the role of AI, moving from the category of niche experimental tools to a primary driver of digital commerce capable of radically restructuring value chains. The level of business adoption also shows unprecedented growth. According to Singla et al. (2025), as shown in Figure 2, 88% of organisations already regularly use AI in at least one of their business functions, compared to 78% in 2024. Concurrently, a shift in focus is observed from basic generative models to more complex autonomous systems: over 60% of market participants are

integrating AI agent systems based on foundational models that can independently plan and execute multi-stage workflows in real-world operating environments (Singla et al., 2025).

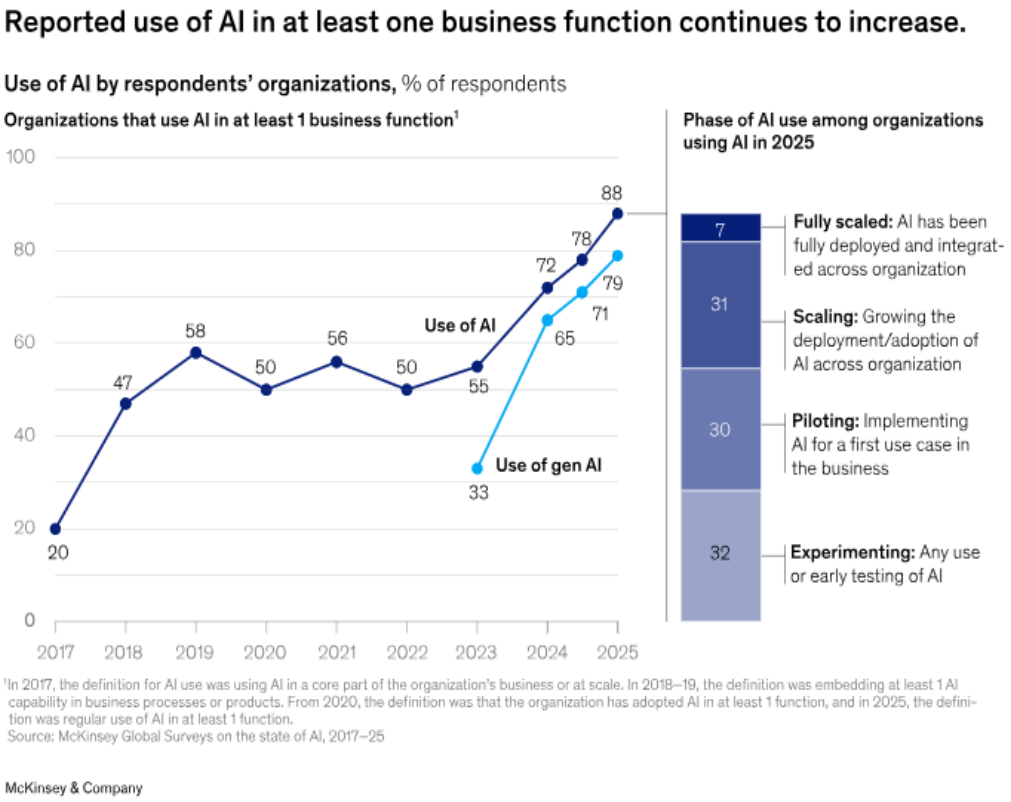

Figure 2. Trends in the use of AI and generative AI in organisations (2017–2025)

Source: (Singla et al., 2025).

However, behind the positive adoption statistics lies a systemic challenge regarding scalability. The critical hurdle remains the transition from localised pilot projects to full-scale deployment of digital initiatives across the entire organisation. Analytical data from McKinsey (2025) suggests that nearly two-thirds of enterprises are still in the experimental pilot phase, unable to integrate AI solutions into a unified corporate operating model. This problem is primarily rooted in the structural unreadiness of traditional retail to implement self-learning algorithms into closed business cycles.

The position of generative AI on the technology maturity curve is indicative in this context. According to the Khandabattu (2025) report, the technology is currently in the "Trough of Disillusionment" phase, characterised by difficulties in justifying the return on investment (ROI). Specifically, fewer than 30% of AI leaders report that their CEOs are satisfied with the returns on these investments. Organisations with low digital maturity

typically hold unrealistic expectations about technology and fail to overcome barriers in risk management, including model hallucinations, algorithmic bias, and a shortage of qualified specialists. For the jewellery industry, these risks are particularly acute; any factual AI error in describing gemstones or incorrect product visualisation can cause irreparable damage to a brand's reputation.

A study of market leaders' practices allows for the identification of an alternative model for successful implementation. According to Singla et al. (2025), high-performing organisations achieve significant economic impact not through point AI applications for cost reduction, but through a fundamental reimagining of workflows. Such companies view AI not as an add-on to existing operating models, but as their new structural core, and are three times more likely to use the technology as a catalyst for transformational change, focusing on stimulating innovation and ensuring sustainable growth rather than mere resource optimisation.

Systemic AI integration acquires particular importance in the marketing strategies of the premium segment. Given the specific nature of jewellery retail marketing, these global trends require a tailored approach. One of the most effective strategies for the jewellery industry is the 4C marketing mix (Customer, Cost, Convenience, Communication), in which the customer's opinion and individual psychological needs serve as the core value. AI becomes a tool that enables the realisation of the 4C concept at the level of the individual consumer rather than an averaged segment (Yanchuk & Sharko, 2025). Accordingly, the primary directions for AI application in jewellery retail marketing encompass three key vectors.

First, hyper-personalisation and deep behavioural analytics: machine learning and semantic analysis methods enable the processing of vast datasets on search activity, demographic profiles, and purchasing preferences. This enables the formation of personalised recommendations and a transition from "product offering" to "life event support," significantly increasing the customer's long-term lifetime value (LTV).

Second, intelligent content generation and communication: modern Large Language Models (LLMs) can automate the creation of marketing materials while maintaining the "elite" communicative style characteristic of luxury brands, providing a level of service previously attainable only through highly qualified consultants.

Third, dynamic pricing: AI algorithms allow for real-time price adjustments based on demand fluctuations, commodity market quotes for precious metals, and user behavioural patterns, ensuring an optimal balance between profitability and customer loyalty. The systematisation of these processes is presented in *Table 1*, demonstrating the transformation of each marketing mix element under the influence of intelligent systems.

Table 1

Matrix of AI applications in the 4C marketing system for a jewellery enterprise

4C element	AI application area	Process description	Expected result
Customer	Hyper-personalization	Predictive Big Data analytics for generating individualised offers	Increased conversion rates and customer loyalty (LTV)
Cost	Dynamic Pricing	Automated price adjustments based on real-time market quotes and demand fluctuations	Maximisation of marginal profit
Convenience	AI Agents & Virtual Try-on	Implementation of Augmented Reality (AR) and chatbots for online jewellery selection	Shortening of the purchase decision cycle
Communication	Generative Copywriting (NLP)	Automated content creation aligned with the brand's unique Voice and Identity	Reduced content production costs alongside increased reach

Source: compiled by the authors based on (Akbar, et al., 2023; Rauschnabel, et al., 2024; Kudelskyi, 2025).

Thus, the analysis of the current state of AI scaling in e-commerce demonstrates that artificial intelligence is no longer merely an auxiliary technological tool, but a strategic driver of transformation in digital retail. For jewellery enterprises, its value lies not only in improving operational efficiency but also in enabling deeper personalisation, more precise communication, dynamic pricing, and enhanced customer experience. At the same time, the successful implementation of AI depends on the ability of companies to move beyond isolated pilot projects and integrate intelligent systems into their broader marketing and business processes. In this context, particular attention should be paid to the practical effectiveness of AI in one of the most important areas of digital marketing – the creation of advertising content.

2. AI effectiveness in advertising content creation

2.1. The impact of AI on marketer productivity

Despite the growing interest among researchers in the integration of artificial intelligence into marketing processes, quantitative evidence regarding its specific impact on professional productivity remains scarce. Field experiments conducted by Ju and Aral (2026) partially address this gap: their findings indicate that hybrid "human–algorithm" interaction models yield a 50% productivity gain per specialist compared to traditional teams without algorithmic support.

This significant economic effect is driven not only by the purely computational power of neural networks but also by a profound transformation in the logic of labour organisation. The integration of autonomous

systems fundamentally alters the nature of marketing activities; the focus of attention shifts from the manual execution of operations to their strategic delegation and multi-level coordination. There is a conceptual evolution of the professional functional profile: from a direct content creator, the specialist becomes a process architect who formulates prompts and performs expert verification of results. This transformation goes beyond simple adaptation to a new toolkit and constitutes evidence of a structural change in the professional role, as confirmed by specific behavioural metrics.

As Ju and Aral (2026) note, the most indicative marker of this change in the nature of labour is a 62% reduction in direct manual text interventions during the generation of advertising campaigns. Routine processes such as initial copywriting, vocabulary selection, and stylistic polishing, which previously consumed the bulk of working time, are now effectively handled by generative models. Consequently, human cognitive resources are liberated for critical auditing. Concurrently, there is a 17% increase in the volume of tasks delegated to intelligent agents. This metric illustrates not only workload optimisation but also the gradual formation of professional trust in autonomous systems, enabling the transfer of increasingly complex, multi-stage algorithmic workflows.

The transformation of intra-team interaction structure deserves special attention. Research by Ju and Aral (2026) records a 25% increase in the share of task-oriented communication (goal setting, operational planning, and formalising instructions), while the volume of socio-emotional contacts between employees decreases by 18%. The professional discourse becomes more pragmatic and criteria-based, a logical consequence of shifting creative routine to algorithms. However, this decline in the intensity of informal communication poses latent risks; in the long term, it may undermine social cohesion and the originality of collective decisions. For the marketing of premium brands, where the subjective and creative components are paramount, such algorithmic communication could become a point of vulnerability. This phenomenon undoubtedly requires thorough verification in future scientific inquiries.

The fundamental driver of productivity growth is the ability of algorithms to automate routine operations and process large datasets at speeds that fundamentally exceed human capabilities. Accordingly, the role of the specialist evolves toward the position of a strategic coordinator responsible for task setting and quality control of results generated by intelligent systems. At the same time, it must be noted that despite the high efficiency of generative models in linguistic and analytical data processing, their capabilities remain limited when solving complex visual-aesthetic tasks. This limitation necessitates a detailed consideration of the "jagged frontier" phenomenon, which is the focus of the next subsection.

2.2. Visual specifics of jewellery advertising and the "jagged frontier" effect

Despite the positive impact on marketing team productivity, the efficacy of AI utilisation is far from uniform. To analytically describe this inconsistency, scholars employ the concept of the "jagged technological frontier," which characterises the asymmetric nature of modern AI system competence (*Figure 3*). The technology demonstrates a substantial advantage in certain tasks while simultaneously falling short of human performance in others (Dell'Acqua et al., 2026; Ju & Aral, 2026). This specific concept serves as a key analytical tool for assessing the potential and limitations of AI within the context of jewellery retail advertising.

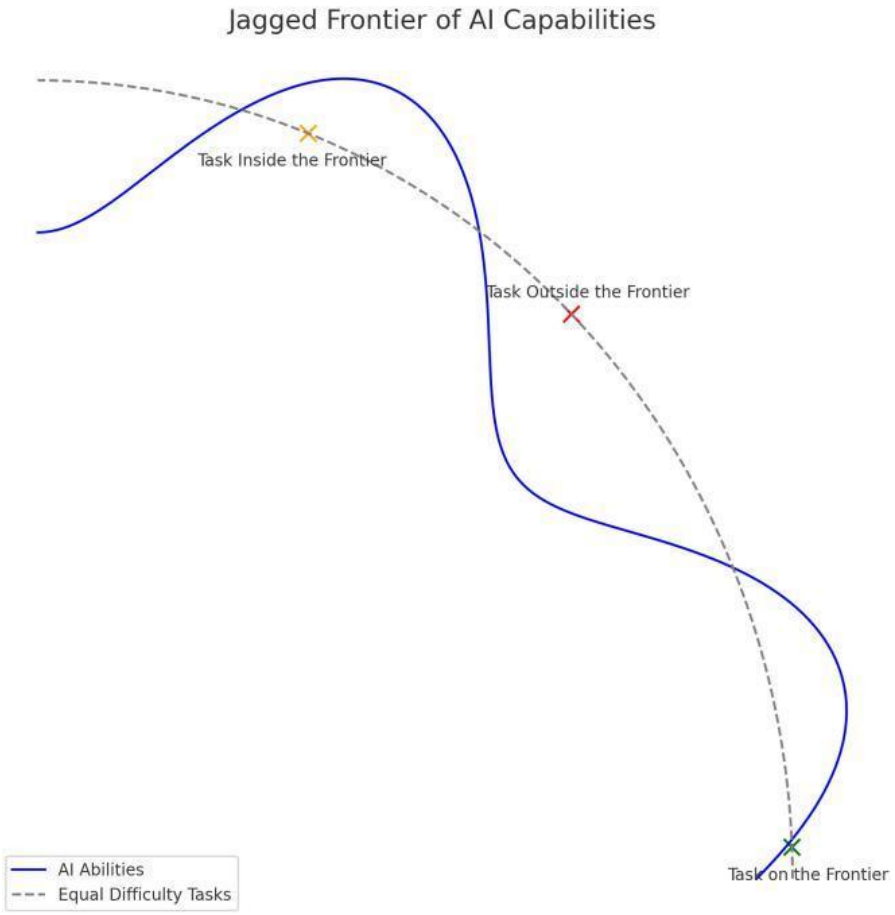

Figure 3. The Jagged AI Frontier

Source: (Dell'Acqua et al., 2026).

Textual content generation tasks fall within the "inside" of the jagged frontier, where AI consistently outperforms humans. Empirical data suggest that advertising copy created with algorithmic support is of higher quality than materials prepared by specialists without AI tools (Ju & Aral, 2026). Practical confirmation of this pattern was obtained through the analysis of

real-world social media advertising campaigns: the superior quality of AI-generated texts statistically correlates with improved click-through rates (CTR) and view-through duration (Ju & Aral, 2026).

A fundamentally different picture is observed in the sphere of visual content creation. The generation of high-quality imagery currently remains "outside" the capabilities of AI systems: teams consisting exclusively of human specialists consistently produce aesthetically superior and more attractive advertising images that surpass the outputs of generative models (Dell'Acqua, F., et al., 2026; Ju, H., & Aral, S., 2026). For the jewellery market, this fact is of critical importance. Visual appeal, the play of light on gemstone facets, the lustre of precious metals, and the precision of detail reproduction–are decisive factors in the purchasing decision and directly translate into behavioural metrics of the advertising campaign (Kobets, 2021). Notably, it is precisely the high quality of human-created and curated visual content that contributes to a significant reduction in cost-per-click (CPC) in advertising campaigns (Ju & Aral, 2026).

Thus, the analysis of AI effectiveness in advertising content creation demonstrates that artificial intelligence can significantly increase marketer productivity and improve the quality of certain types of advertising materials, particularly text-based content. However, the "jagged frontier" effect shows that AI capabilities remain uneven, especially in visually sensitive areas such as jewellery advertising, where aesthetic precision, emotional appeal, and product authenticity are decisive. Therefore, while AI offers considerable opportunities for optimising marketing processes, its application in jewellery retail also presents specific risks and limitations. This makes it necessary to further examine the key threats and challenges associated with the use of AI in jewellery retail marketing.

3. Threats and challenges of AI utilisation in jewellery retail marketing

Despite the significant potential of AI to intensify marketing processes, the implementation of artificial intelligence technologies within the jewellery retail marketing cycle is accompanied by a series of specific threats that require systemic consideration. These challenges can be categorised into three key pillars: creative limitations, ethical and legal risks, and intellectual property issues.

The first and most specific challenge for the creative industry is the phenomenon of "diversity collapse." Empirical evidence suggests that the excessive delegation of creative functions to algorithms leads to progressive homogenization of content: generated advertising materials acquire signs of self-similarity and gradually lose necessary variability (Ju & Aral, 2026; Padmakumar & He, 2024). While intelligent systems are capable of raising the average qualitative level of materials, they simultaneously neutralise original ideas that arise through human cognitive interaction and are rooted

in the unique professional experience of specialists. For a jewellery brand, whose competitive advantage is defined by design authenticity and emotional uniqueness of communication, such homogenization poses a direct threat to differentiation and erodes market positioning.

The second block of challenges encompasses data security and the ethics of algorithmic decision-making. The implementation of hyper-personalisation strategies involves processing vast arrays of sensitive personal information, creating significant risks in the event of non-compliance with cybersecurity protocols. Unauthorised data breaches or misuse can cause irreversible damage to a brand's reputational capital (Romanchuk et al., 2024). Particular attention should be paid to the problem of the factual reliability of generative models. Modern systems remain vulnerable to so-called "hallucinations" the production of content that is convincing in form but false in substance, as well as manifestations of algorithmic bias (Khandabattu, 2025). In the jewellery industry, where the accuracy of product characteristics is critical for consumer trust, such errors can have particularly severe consequences. The use of automated systems also creates a basis for manipulative practices, such as the generation of unreliable consumer reviews or the implementation of non-transparent dynamic pricing mechanisms (Romanchuk, et al., 2024).

The third block is related to legal uncertainty in the field of copyright and intellectual property. The scaling of algorithmically generated content actualises legal risks stemming from the fact that the training datasets of generative models often contain materials protected by copyright (Singla et al., 2025). Business entities integrating AI into the creation of advertising products are forced to consider this factor as part of their compliance strategy.

The sum of these risks indicates that the full autonomy of marketing functions at the current stage is premature. The effective use of AI in jewellery marketing requires not the elimination of the human factor, but its reimagining. Qualified personnel must perform functions of strategic oversight, ethical expertise, and creative control, ensuring the preservation of the brand's corporate identity and compliance with legal norms.

4. Conceptual hybrid model for jewellery retail

Summarising the research findings presented in the previous sections, the logical progression of this work is the development of an applied mechanism to mitigate the identified threats. Given the limitations of the "jagged technological frontier" (Subsection 2.2) and the systemic risks of "diversity collapse" inherent in the full automation of creative processes (Section 3), there is an urgent need to establish a new management architecture.

To overcome these challenges, this study proposes a specialised hybrid model for organising marketing departments–the Intelligent Symbiosis Marketing Framework (ISMF), which is an original conceptual development tailored to the specifics of jewellery retail. The framework is

built upon two complementary principles: the "Human-in-the-loop" strategy, which ensures mandatory human participation at key decision-making stages, and the "Centaur behaviour" pattern. The latter describes an interaction model where humans and algorithms operate in parallel and complementarily rather than sequentially. In this setup, humans undertake tasks requiring creative judgment and emotional intelligence, while algorithms process analytically intensive operations (Dell'Acqua, F., et al., 2026). Unlike the situational application of digital tools, this model provides a clear strategic division of labour based on objective criteria of technological competence.

The conceptual architecture of the proposed ISMF hybrid model is visualised in *Figure 4*.

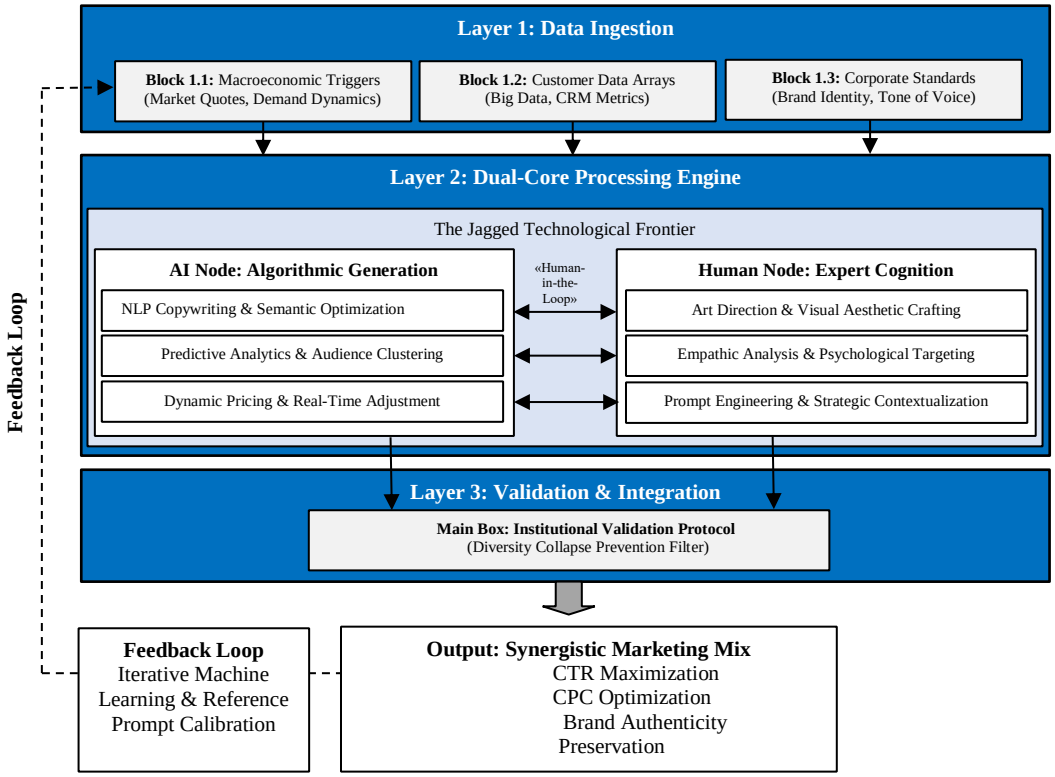

Figure 4. Intelligent symbiosis marketing framework (ISMF)

Source: developed by the authors based on (Dell'Acqua et al., 2026; Ju & Aral, 2026; Kobets, 2021; Romanchuk, et al., 2024).

The practical implementation of the ISMF architecture involves the transformation of marketing operations across three interconnected dimensions.

The first dimension is the algorithmic delegation of linguistic and analytical routines. The functional profile of the marketer is transformed from a direct content generator into a strategic coordinator. Intelligent systems are tasked with developing advertising materials, crafting personalised communications, structuring customer databases, and implementing dynamic pricing, adjusting product costs in real time in response to exchange quotes and shifts in consumer demand.

The second dimension is the preservation of human expertise in visual aesthetics, as the creation of emotionally resonant visual content currently remains outside the technological competence of algorithms. This is due to the fact that the accurate rendering of the optical properties of gemstones (play of light, dispersion, colour depth), as well as the creation of a complementary visual context that conveys status and evokes an empathic response from the consumer, requires refined aesthetic taste and cultural contextualization. These characteristics are highly subjective and currently defy algorithmic formalisation, remaining within the domain of exclusive human competence.

The third dimension is the institutionalisation of validation protocols to neutralise the risk of "diversity collapse." The marketing team develops reference corporate prompts with detailed semantic instructions to preserve the brand's unique "voice." No algorithmically generated material is integrated into the external media space without a final expert audit; this principle ensures the systemic protection of unique brand identity against gradual algorithmic unification.

At the same time, the model has defined limitations regarding its applicability. Its successful implementation assumes a sufficient level of digital maturity within the organisation: enterprises at the early stages of digitalisation may encounter technical and infrastructural barriers. The model also requires investment in developing competencies in prompt engineering and the critical auditing of algorithmic outputs (Relyea, C., et al., 2024), which may serve as a limiting factor for small and medium-sized enterprises.

A clear distribution of tasks between humans and algorithms requires the development of internal regulations, the absence of such guidelines reproduces the very problem of chaotic AI usage that the model is intended to solve. Finally, the boundaries of the "jagged frontier" are dynamic; tasks that are currently beyond the competence of algorithms may be mastered by them in the near future, necessitating a regular review of the criteria for the division of labour.

Conclusions

The conducted research allows for the assertion that digitalisation and the implementation of artificial intelligence technologies in e-commerce constitute an irreversible transformational process. The dynamic growth of the global AI market and the widespread deployment of autonomous AI agents are fundamentally reshaping the workflow architecture. For jewellery retail, where marketing communication has traditionally relied on the 4C strategy and close emotional contact, this transformation opens unprecedented opportunities for hyper-personalisation, dynamic pricing, and the scaling of advertising campaigns.

The results of the study correlate closely with the stated objective and illustrate that the underlying scientific hypothesis has been fully confirmed. It has been proven that the application of generative AI is subject to the "jagged frontier" effect of capabilities (Dell'Acqua et al., 2026). The technology acts as a powerful catalyst for productivity (providing a 50% increase in content generation) and quality in textual tasks; however, it acts

as a destructor in the creation of high-quality visual content, which is critical for jewellery sales (Ju & Aral, 2026).

The effectiveness of a hybrid approach for preserving the uniqueness of jewellery brands has been confirmed. The study revealed that excessive delegation of creative tasks to algorithms inevitably leads to "diversity collapse" and the homogenization of advertising (Ju & Aral, 2026). For jewellery companies, whose value is based on exclusivity and aesthetics, fully autonomous advertisement generation by algorithms poses a threat to the brand's DNA. Therefore, the most effective solution is the proposed hybrid model based on the "Centaur" strategy principles, where AI generates textual content and processes data arrays, while the human marketer exercises strategic control over visual aesthetics and emotional value (Dell'Acqua et al., 2026; Kobets, 2021).

The scientific novelty and contribution of the study lie in the development and justification of a conceptual hybrid model for task distribution in jewellery brand advertising campaigns, which allows for maximising productivity without the risk of losing creative authenticity.

The practical value of the results lies in the formulation of specific recommendations for heads of marketing and e-commerce departments at jewellery enterprises. It has been proven that successful AI transformation requires marketers to transition from the role of executors to the role of managers capable of delegating tasks to algorithms. This necessitates an urgent practical need for companies to invest in staff retraining, particularly in developing skills for effective prompt engineering and critical ethical evaluation of generated outputs to minimise security risks and avoid algorithmic manipulation.

Prospects for further research in this area involve conducting longitudinal studies on the impact of AI-generated visual content (specifically video formats) on consumer trust levels in the luxury segment. Additionally, the economic efficiency of implementing fully autonomous multi-agent AI systems in direct sales processes and omni-channel customer service for jewellery brands requires separate investigation.

REFERENCES / СПИСОК ВИКОРИСТАНИХ ДЖЕРЕЛ

Akbar, M. B., Lawson, A., & Turner, N. (2023). Extending Lauterborn's 4Cs for social marketing. In C. Fourali & J. French (Eds.), *The Palgrave Encyclopedia of Social Marketing*. Springer Nature Switzerland AG. https://doi.org/10.1007/978-3-030-14449-4_12-3

Dell'Acqua, F., McFowland III, E., Mollick, E., Lifshitz-Assaf, H., Kellogg, K. C., Rajendran, S., Krayer, L., Candelon, F., & Lakhani, K. R. (2026). Navigating the jagged technological frontier: Field experimental evidence of the effects of artificial intelligence on knowledge worker productivity and quality. *Organization Science*. https://doi.org/10.1287/orsc.2025.21838

Ju, H., & Aral, S. (2026). *Collaborating with AI Agents: A Field Experiment on Teamwork, Productivity, and Performance*. Johns Hopkins Carey Business School, MIT Sloan School of Management. https://arxiv.org/html/2503.18238v3

Khandabattu, H. (2025). *The Latest Hype Cycle for Artificial Intelligence Goes Beyond GenAI*. Gartner. https://www.gartner.com/en/articles/hype-cycle-for-artificial-intelligence

Kobets, D. L. (2021). Features of marketing strategy in the jewellery industry. *Visnyk Khmelnytskoho natsionalnoho universytetu. Ekonomichni nauky*, *6*(2), 118–123. https://doi.org/10.31891/2307-5740-2021-300-6/2-19	Кобець, Д. Л. (2021). Особливості маркетингової стратегії в ювелірній галузі. *Вісник Хмельницького національного університету. Економічні науки, 6*(2), 118–123. https://doi.org/10.31891/2307-5740-2021-300-6/2-19
Kudelskyi, V. E. (2025). Artificial intelligence in marketing: Advantages and disadvantages. *International Scientific Journal "Grail of Science"*, (55), 145–153. https://doi.org/10.36074/grail-of-science.22.08.2025.015	Кудельський, В. Е. (2025). Штучний інтелект в маркетингу: переваги та недоліки. *Міжнародний науковий журнал "Грааль науки"*, (55), 145–153. https://doi.org/10.36074/grail-of-science.22.08.2025.015

Padmakumar, V., & He, H. (2024). *Does writing with language models reduce content diversity*. https://doi.org/10.48550/arXiv.2309.05196

Rauschnabel, P. A., Felix, R., Heller, J., & Hinsch, C. (2024). The 4C framework: Towards a holistic understanding of consumer engagement with augmented reality. *Computers in Human Behavior*, (154), Article 108105. https://doi.org/10.1016/j.chb.2023.108105

Relyea, C., Maor, D., Durth, S., & Bouly, J. (2024). *Gen AI's next inflection point: From employee experimentation to organizational transformation.* McKinsey & Company. https://www.mckinsey.com/capabilities/people-and-organizational-performance/our-insights/gen-ais-next-inflection-point-from-employee-experimentation-to-organizational-transformation

Romanchuk, L. A., Shchytov, D. M., & Mormul, M. F. (2024). Artificial intelligence in electronic commerce: Key aspects, directions, threats. *Naukovyi pohliad: ekonomika ta upravlinnia*, *4*(88), 19–26. https://doi.org/10.32782/2521-666X/2024-88-2	Романчук, Л. А., Щитов, Д. М., & Мормуль, М. Ф. (2024). Штучний інтелект в електронній комерції: ключові аспекти, напрями, загрози. *Науковий погляд: економіка та управління, 4*(88), 19–26. https://doi.org/10.32782/2521-666X/2024-88-2

Singla, A., Sukharevsky, A., Hall, B., Yee, L., Chui, M., & Balakrishnan, T. (2025). *The state of AI in 2025: Agents, innovation, and transformation.* McKinsey & Company. https://www.mckinsey.com/capabilities/quantumblack/our-insights/the-state-of-ai#/

Yanchuk, T., & Sharko, V. (2025). Artificial intelligence in e-commerce: Automation, personalization, efficiency. *Osvita/Pedahohika*. https://doi.org/10.5281/zenodo.15148589

Zoting, S. (2026). Artificial Intelligence in E-commerce Market Size, Share, and Trends 2026 to 2035. *Precedence Research*. https://www.precedenceresearch.com/artificial-intelligence-in-e-commerce-market

Conflict of interest. The authors certify that they have no financial or non-financial interest in the subject matter or materials discussed in this manuscript; the authors have no association with state bodies, any organisations or commercial entities having a financial interest in or financial conflict with the subject matter or research presented in the manuscript. Given that one of the authors is affiliated with the institution that publishes this journal, which may cause potential conflict or suspicion of bias and therefore the final decision to publish this article (including the reviewers and editors) is made by the members of the Editorial Board who are not the employees of this institution.

The authors received no direct funding for this study.

Chunikhina, T., & Chistiakova, S. (2026). AI-advertising in jewelry retail. *Scientia fructuosa, 4*(168), 116–130. http://doi.org/10.31617/1.2026(168)08

Received by the editorial office 15.04.2026.
The article has been revised 18.05.2026.
Accepted for printing 25.06.2026.
Published online 07.09.2026.