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Oleg Kuzyk

PhD in Economics, Associate Professor of the Department of Marketing, Ivan Franko National University of Lviv, Lviv, Ukraine;
ORCID: [0000-0002-9683-8697](https://orcid.org/0000-0002-9683-8697)

Olena Kabanova

PhD in Economics, Associate Professor of the Department of Logistics Management, A Branch of the Classical Private University, Kremenchuk, Ukraine;
e-mail: desigura.15@gmail.com
ORCID: [0009-0008-9206-3995](https://orcid.org/0009-0008-9206-3995)
(Corresponding author)

Hanna Chyrva

PhD in Pedagogical Sciences, Associate Professor of the Department of Economics and Social and Behavioral Sciences, Institute of Economics and Business Education, Pavlo Tychyna Uman State Pedagogical University, Uman, Ukraine;
ORCID: [0000-0003-3791-6111](https://orcid.org/0000-0003-3791-6111)

Dmytro Vlasenko

PhD in Economics, Associate Professor of the Department of Management and Agrarian Economics, Separate Division "Nizhynsky Agrotechnical Institute", National University of Bioresources and Nature Management of Ukraine, Kyiv, Ukraine;
ORCID: [0000-0003-3342-7927](https://orcid.org/0000-0003-3342-7927)

Hanna Komarnytska

Doctor of Economic Sciences, Associate Professor, Head of the Department of Public administration and business management, Ivan Franko National University of Lviv, Lviv, Ukraine;
ORCID: [0000-0002-5533-6439](https://orcid.org/0000-0002-5533-6439)

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TRENDS AND PERSPECTIVES ON THE IMPACT OF DIGITAL TECHNOLOGIES ON THE EFFICACY OF MARKETING COMMUNICATION

ABSTRACT

The research conducted aimed to determine the most attractive digital marketing technologies for future investment opportunities. This was achieved through a cross-priority ranking analysis, which identified trends in the development of digital technologies in marketing communications and global marketing. Data from 25 expert organisations was used to form a set of 32 digital solutions. Using a developed methodology, these solutions were ranked, revealing the top 6 with the highest potential for transforming marketing communications.

The rankings showed a discrepancy between the mentioned frequency ranking and the priority ranking, indicating the influence of marketing organizations' experience. Currently, social media platforms, particularly influencer marketing, are closely integrated with e-commerce, explaining their high mention frequency. However, a cross-ranking analysis revealed a trend towards AI technologies in marketing communications processes.

It has been established that obtaining credit funds for the deployment of modernized marketing campaigns and strategies impacts the financial security of such organizations. Moreover, the utilization of optimal conversion-oriented digital marketing tools allows for a significant reduction in financial risks and an increase in the profitability of companies.

The study further identified the future direction of global marketing development, which involves immersive strategies that deeply integrate and extensively use AI technologies. These strategies aim to enhance consumer interest and engagement. The practicality of this research lies in its ability to assist stakeholders in making informed investment decisions and reducing the risks of misdirected investments.

Further research is recommended to explore practical mechanisms for implementing the identified digital solutions in global marketing processes. This would involve developing a detailed strategy aligned with these technologies.

Keywords: MarTech, FinTech, AI & ML, social commerce, influencer marketing, Big Data & Analytics, web analytics, VR/AR/MR, extended reality, voice marketing, interactive content marketing, reduction of financial and credit risks

JEL Classification: M30, M31, C55, C81, C82, G17, G32

INTRODUCTION

The advent of Industry 4.0, accompanied by the rapid growth of e-commerce, has necessitated a reevaluation of the MarTech concept. Scholars such as Sanakuiev et al. (2023), Verbivska et al. (2022), and Dykan et al. (2021) have discussed the consequences of digital technologies and their impact on the marketing sector. Recent data reveals the clear advantages of digital marketing over traditional methods.

In 2022, it was observed that digital marketing exhibited greater effectiveness, generating 50% more customer interaction. It also proved to be more profitable, reducing costs by 62% while increasing productivity nearly threefold. Furthermore, digital content management tools are preferred by 70% of consumers as a means to learn about products, with 81% of customers conducting online research before making a purchase.

Market research indicates that 64% of consumers consider marketing videos on social media platforms to be influential in their decision-making process, and nearly half (49%) of consumers aged 18-29 have made purchases after viewing social media advertisements. These compelling facts have led 60% of marketers across different industries to prioritize digital marketing efforts. Additionally, the significance of SEO in B2B marketing is nearly eight times higher in digital marketing than in traditional methods (Top digital marketing vs traditional marketing statistics in 2023 - Amra and Elma LLC, 2023). According to recent projections, it is anticipated that in 2022, individuals will spend an average of 6.5 hours daily engaged in digital media consumption. Moreover, research suggests that 72% of users who view mobile advertisements subsequently visit a nearby store within a 5-mile radius. As a result of these statistics, a significant majority (85%) of retailers contend that search marketing, encompassing both paid advertising and search engine optimization (SEO), is the most efficacious method for attracting customers. Furthermore, nearly 89% of companies have embraced content marketing as a vital component of their digital marketing strategies. Additionally, approximately 44% of marketers perceive digital marketing as a more lucrative endeavour, particularly due to the substantial return on investment (ROI) offered by email marketing, which currently boasts an impressive average ROI of 122%. In fact, this ROI is more than four times higher than that of other marketing formats. It is worth noting that digital marketing is also advantageous in terms of cost, as it accounts for 47% of corporate budgets, leaving traditional marketing with a 53% share. Consequently, the growing significance of digital marketing is expected to prompt a considerable increase in MarTech digitalization investments, projected to reach USD 146 billion by 2023 (Essential digital marketing vs. traditional marketing statistics in 2023 - ZipDo, 2023).

In 2023, research discovered that a significant number of marketers, 66%, view digital advertising as more effective than traditional advertising. Moreover, the majority of consumers, over 75%, prefer advertising that is tailored to their interests rather than generic product messages. As a result, approximately 85% of marketers now believe that personalized content in digital marketing campaigns is more successful in generating conversions compared to traditional marketing approaches. To support this, digital marketing has been shown to yield an average increase in sales conversion rates of 9.9%, while traditional marketing only achieves a mere 1.7% increase. These statistics highlight the clear advantages of utilizing digital marketing strategies over traditional methods, leading many marketers to adopt and implement digital transformation strategies.

At the same time, many companies are dealing with the challenge of market oversaturation. This issue has emerged due to the rapid advancement of digital tools and their integration into the modern business environment. This situation poses a significant risk of misguided investments as companies may end up spending money on technologies that do not yield the expected economic benefits (Martynenko et al., 2023; Karapetov & Rakhimov, 2021; Kovalchuk, Kobets & Zaburmekha, 2019).

In the financial and credit industry, the impact of digital transformation tools and marketing policies is evident in key aspects, notably financial indicators and corporate strategies. Specifically, digital technologies exert a notable influence on the budgeting of marketing initiatives, leading to increased expenditures related to integrating and maintaining digital tools in marketing campaigns. A close examination of company budgets reveals that resources earmarked for digital marketing have become integral to strategic financial planning. Additionally, as companies transition to digital marketing strategies, they encounter various opportunities for financing, although challenges emerge in determining optimal funding conditions to achieve set marketing objectives (Sangarathas, 2023; Utomo, Budihantho & Listyorini, 2022; Al-Dmour et al., 2020).

Therefore, it is crucial to thoroughly examine trends, tendencies, and prospects in the field of digital transformation of marketing. This research is not limited to marketing alone but also extends to other management sectors such as banking (Prokopenko, 2021), human resources (Bannikova, 2019), and education (Shakharova, Beisenova & Amerkhanova, 2022). Identifying areas of digital transformation within the MarTech framework that are highly appealing will help drive and attract investments, ultimately contributing to the overall economic development of society.

LITERATURE REVIEW

To develop a comprehensive understanding of how digital technologies are impacting the marketing industry, it is essential to engage with a wide range of relevant publications and research papers. This will provide a factual foundation for conducting focused studies on the topic, while also ensuring that proper credit is given to the original authors and avoiding plagiarism.

The study Sangarathas (2023) introduces a novel approach to reduce the intention-behavior gap in the utilization of marketing technologies (MarTech) within the financial sector (FinTech). For the first time, the concept of "current pre-experience" (CPEX) is identified as a crucial factor influencing the transition from intention to actual user behaviour in

MarTech within the context of financial services. The research findings indicate that the effectiveness of customer interaction in FinTech significantly depends on pre-experiences at various stages of their interaction with technologies. From a practical standpoint, the study recommends FinTech marketers focus on improving pre-experiences in MarTech to bridge the gap between user intention and actual behaviour. This may involve enhancing organizational reputation, utilizing visualization, and providing support to stimulate user intentions in the realm of financial technologies. Such an approach contributes not only to reducing the intention-behavior gap but also to activating practical strategies for FinTech marketers to enhance user interaction in the field of marketing technologies.

The study by Utomo, Budihantho & Listyorini (2022) explores how changes in the business environment drive Small and Medium Enterprises (SMEs), particularly fashion-based ones in Yogyakarta and Semarang, to utilize fintech and marketing technology for improved marketing performance. Analyzing data from 100 SMEs through purposive sampling and using WarpPLS, the findings reveal that market orientation significantly influences the adoption of fintech and online-based marketing technology. However, market orientation does not directly impact marketing performance. In contrast, the study highlights the substantial positive effects of utilizing fintech and online-based marketing technology on enhancing marketing performance. While emphasizing the critical role of market orientation in guiding technological adoption in finance and marketing, the study acknowledges limitations in measuring marketing performance comprehensively due to incomplete sales books in some SMEs. The call for further research suggests a more comprehensive examination of performance indicators to better understand the relationship between market orientation, technology adoption, and marketing performance in SMEs.

The study by Al-Dmour et al. (2020) aimed to investigate the impact of marketing knowledge management (MKM) on bank performance in Jordanian commercial banks, considering the mediating role of Fintech innovation. While prior research has identified a significant relationship between MKM and bank performance, this study contributes by empirically testing the mediating effect of Fintech innovation. Findings revealed a positive influence of MKM on bank performance, with Fintech innovation acting as a partial mediator. Recommendations suggest that commercial banks should prioritize knowledge management practices to enhance financial innovation and overall performance, fostering a culture of knowledge management among employees. The study encourages further research to validate and explore the mediating role of Fintech innovation in similar contexts and across various sectors.

For instance, Pascucci, Savelli & Gistri (2023) conducted a multiple-case study approach to explore the complex relationships between digital technology (DT) and marketing. Their study revealed two main findings. Firstly, DT has a transformative effect on marketing, shifting it from a fragmented approach to a holistic strategy. This change influences the role and organization of marketing, as well as broadening the decision-making horizon. The authors note that marketing is becoming more customer-focused and systemic as a result. Secondly, the study identified potential risks and barriers to DT, particularly for smaller firms, and suggested cultural, organizational, and personal measures to achieve a balance. While the study has its limitations, Pascucci, Savelli & Gistri (2023) demonstrated that DT represents a new era of marketing evolution, strengthening the connection between theory and practice, particularly for SMEs. They also emphasized the significance of marketing for the competitiveness and success of companies.

In another study, Munir, Kadir & Umar (2023) employed structural equation modelling to investigate the relationship between digital marketing, articulatory ability, and marketing performance. The findings highlighted that emerging SMEs in the field of digital marketing can improve their marketing performance, especially when they possess higher digital marketing articulatory capability. The authors found that the ability to express their brand (articulatory) plays a mediating role in the relationship between digital marketing and marketing performance, showcasing its importance for SMEs. To enhance their marketing performance, Munir, Kadir & Umar (2023) propose that SMEs actively utilize brand management to develop their articulatory capabilities. They suggest that this approach can significantly benefit SMEs in improving their marketing performance.

In their analysis, Jadhav, Gaikwad, and Bapat (2023) conducted a comprehensive examination of digital marketing and its effects on small and medium-sized enterprises (SMEs). Through a systematic review of existing literature, the researchers discovered that while digital marketing is utilized by certain SMEs, its impact varies greatly, making it difficult to recommend a universal strategy. The authors also studied the development of digital marketing techniques over time and how SMEs are adapting them for their own growth. The findings of the study have practical implications, providing suggestions on how SMEs can enhance their efficiency by embracing digital marketing technologies.

In a separate study, Nalbant and Aydin (2023) observed that the successful advancement of the Metaverse and digital transformation is crucial for the progress of both nations and individual businesses. Virtual worlds possess the potential to revolutionize communication, product advertising, and customer service. It is important to acknowledge that the Metaverse is still in its early stages, necessitating the creation of strategies by business organizations to fulfil consumer demands.

This will aid businesses in facilitating effective communication with customers, understanding their needs, and delivering quality service, thereby positively influencing their success and competitiveness. As the metaverse is a burgeoning trend, further research is necessary to expand knowledge and capabilities, particularly in the realm of marketing support.

In their study, Jung & Shegai (2023) analyzed the impact of digital marketing innovation on firm performance, with a specific focus on marketing capabilities and firm size. Their findings revealed that digital marketing innovation positively affects firm performance by enhancing marketing capabilities, and this impact is contingent upon the size of the firm. Moreover, the researchers emphasized that the indirect effect of digital marketing innovation on firm performance through marketing capabilities surpasses the direct effect. These findings hold significant implications for managers. Firstly, marketing managers should prioritize the development of marketing capabilities to fully harness the positive influence of digital marketing innovation on firm performance. Secondly, adopting digital marketing innovations can enhance marketing efficiency, attract new customers, and boost growth and profitability. Lastly, small and medium-sized enterprises can particularly benefit from digital marketing innovations as they can help enhance marketing capabilities and competitiveness. Nonetheless, it is crucial to consider contextual factors, such as industry dynamics and the nature of the innovation, when studying the relationship between innovation and firm performance, particularly in relation to firm size.

According to the aforementioned studies, incorporating contemporary digital technologies into marketing can greatly enhance the effectiveness and competitiveness of businesses. However, researchers have identified certain challenges in successfully implementing digital marketing. These include the necessity of tailoring digital marketing strategies to individual organizations, developing brand coherence through the utilization of cutting-edge digital technologies, and optimizing digital tools within the broader digital landscape to maximize their efficacy.

At the same time, these and other publications do not contain data on appropriate digital marketing communication tools that would meet the trends in the modern development of the modernised MarTech concept. Therefore, there is an urgent need to study trends and prospects for the use of individual digital marketing solutions. The absence of effective recommendations regarding the integration of relevant digital tools and technologies into organizational marketing campaigns poses a corresponding risk, as these institutions often rely on credit resources for the deployment of modern marketing initiatives. Consequently, there is a tangible need to identify an optimal array of digital tools within the marketing domain to mitigate and reduce financial risks for businesses and organizations.

AIMS AND OBJECTIVES

The purpose of this study is to determine the most effective digital marketing communication technologies that will be highly attractive for investment based on the results of cross-priority ranking trends.

The study aims to achieve the following objectives:

- to identify a selection of relevant expert organizations and utilize their findings to create a list of digital solutions that are likely to be integrated into marketing strategies. These solutions should align with current industry trends and future development prospects;
- to assess and assign individual ratings to each expert organization based on the potential and future prospects of the digital technologies identified for modernizing the MarTech concept;
- utilizing cross-priority ranking, identify the digital technologies that best align with current trends and offer high investment attractiveness;
- assess the impact of research findings on identifying practical, conversion-centric, and investment-attractive tools for digital transformation in the marketing sector on the reduction and mitigation of financial risks for organizations and businesses;
- to evaluate the impact and future possibilities of implementing the identified optimal range of digital transformation tools for marketing communications.

METHODS

The study utilizes the foundational principles of the methodology developed in the research by Vasylyuk-Zaitseva et al. (2023). The following methodology was used in this study, which has separate logical stages. The study was conducted in September 2023.

Stage 1. Select a sample of relevant expert organisations that provide marketing and business analytics services.

The sample consisted of 25 expert organisations, which ensured the independence and impartiality of this study: StartUs Insights (Top 9 Marketing Technology Trends in 2023 | StartUs Insights, 2023), TechMagic (Muzyka, 2022), Fifty Five and Five (Sale, 2023), Sloboda Studio (Poperechnaya, 2023), NRG Phoenix (Top Technologies that Boosts the Digital Marketing, 2022), Elicit Digital (Top 10 Upcoming Digital Marketing trends in 2024, 2023), BusinessNewsDaily (Bennett, 2023), Veza Digital (Matthews, 2023), Simplilearn Solutions (Duggal, 2023), Sprout Social, Inc. (Barnhart, 2022), Brand24 (Spiryn, 2023), Determ (Kinga, 2022), Serpstat (Top 20 Internet Marketing Technologies You Shouldn't Miss in 2022, 2022), Martech Zone (Karr, 2022), Forbes (Pec, 2023), SNHU (Gustavsen, 2023), 99designs (The 7 top digital marketing trends of 2023, 2023), Mageplaza (28 Best Digital Marketing Tools, 2023), Intellipaat Blog (Latest Digital Marketing Trends in 2023 | Intellipaat, 2023), Search Engine Journal (Jarboe, 2023), Plerdy (Chornyy, 2023), Thirdeessential IT Solutions Pvt Ltd. (Top 10 Digital Marketing Trends for 2023: Stay Ahead of the Curve, 2023), DigitalMarketer (Petruccio, 2023), Bannerflow (Five Martech Trends for 2023, 2023), GrowthForce (Top 8 Digital Marketing Trends For Businesses in 2023, 2023).

Stage 2. Based on the results of the analysis of the expert opinion of the sample organisations, a randomised set of digital technologies and solutions used (or that can be used) in the field of marketing communications was formed.

The resulting sample comprised 32 digital transformation solutions, grouped into appropriate clusters based on common characteristics: AI & ML, VR/AR/MR, Extended Reality, Social Commerce (Influencer Marketing), Consumer Privacy (Personalised Marketing), Web3 Marketing (DeFi Technologies), Big Data & Analytics (Web Analytics), Low-Code/No-Code Platforms, Voice Marketing (Voice Search), Omnichannel Marketing, Wearable Tech Integration, Chatbots, Blockchain-Based Marketing Tools, Mobile-First Solutions, Push Notifications, IoT, Paid Media, SEO Tools, Email Marketing Platforms, Beacon Technology, Enhanced Video Marketing/Short-Form Video (Interactive Content Marketing), Authentic Long-Form Content (Live Video/Streaming), CRM Software, Remarketing, Content Management System (CMS), Project Management System (PMS), NFTs, Conversion Optimisation Tools, B2B marketing, Graphic Creation Tools, Geofencing, Affiliate Marketing, Pay-Per-Click (PPC).

Stage 3. Based on the experts' assessments, a set of individual ratings and corresponding rankings is formed for each of the selected digital solutions.

Stage 4. According to the analysis of individual ratings of expert organisations, a relative rating was formed by the frequency of mentions of individual solutions for the digital transformation of marketing communications **Ошибка! Источник ссылки не найден.** (Vasylyuk-Zaitseva et al., 2023):

$$RRMF_i = \frac{\sum_{i=1}^n IR_i}{FM_z}, \quad (1)$$

where $RRMF_i$ is the relative rating by the frequency of mentioning digital transformation solutions for marketing communications in the expert community; $\sum_{i=1}^n IR_i$ is the sum of the individual ratings of each expert organisation for digital transformation solutions for marketing communications; FM_i is the frequency of mentioning digital transformation solutions for marketing communications in the expert community.

Stage 5. According to the number of times each of the considered solutions for the digital transformation of marketing communications took the leading position according to the individual assessment of each of the expert organisations involved in the study, a relative priority rating is formed (1) (Vasylyuk-Zaitseva et al., 2023):

$$RRP_i = RRMF_i \times \left(1NT01LP + \frac{1}{2}NT02LP + \frac{1}{3}NT03LP + \frac{1}{4}NT04LP + \frac{1}{5}NT05LP \right), \quad (1)$$

where RRP_i is the priority rating of each of the considered solutions for the digital transformation of marketing communications; $NT01LP...NT05LP$ is the number of times each solution for the digital transformation of marketing communications was ranked first ... and fifth in the individual rating according to expert organisations.

Stage 6. Based on the results of the priority cross-ranking, the optimal set of digital transformation solutions for marketing communications with the greatest potential for attracting appropriate investments is formed.

Stage 7. Evaluate how the outcomes of the research, which focuses on determining practical, conversion-oriented, and financially appealing tools for digital transformation in the marketing industry, influence the reduction and alleviation of financial risks for organizations and enterprises.

Stage 8. Assessment of the likely impact of the identified digital technologies on the field of marketing communications and formulation of relevant analytical conclusions on the prospects for the development of digital marketing in the future.

RESULTS

In accordance with the proposed research methodology, a set of 25 individual ratings of expert organisations (sample of stage 1 of the study) was obtained, which forms a dataset of 32 digital solutions that have the potential to transform and modernise marketing communications (sample of stage 2 of the study) Table 1.

Table 1. A set of 32 digital transformation solutions for marketing communications with individual ratings by 25 expert organisations.
(Source: The table is created based on the methodology developed in the research by Vasylyuk-Zaitseva et al., 2023)

Digital technologies for marketing	StartUs Insights	TechMagic	Fifty Five and Five	Sloboda Studio	NRG Phoenix	Elicit Digital	BusinessNewsDaily	Veza Digital	Simplilearn Solutions	Sprout Social, Inc.	Brand24	Determ	Serpstat	Martech Zone	Forbes	SNHU	99designs	Mageplaza	IntelliPaat Blog	Search Engine Journal	Plerdy	Thirdeessential	DigitalMarketer	Bannerflow	GrowthForce
AI & ML	1			3	5	1	3		9		1			2	2		5		1	1	1	1	1	1	1
VR/AR/MR, Extended Reality	2	2		2	7	3	8		2					5	1		6		8	9	9	5	2		4
Social Commerce (Influencer Marketing)	3		1			5	6	5	5	1	2	5	1		5	8	1	3	6	5	10	3	5	5	2
Consumer Privacy (Personalised Marketing)	4	8		7		6					3			4			2		7	8	3	6		3	6
Web3 Marketing (DeFi Technologies)	5			1			7																		
Big Data & Analytics (Web Analytics)	6	3	5	4	6		5	1		8	7	1	3	1		4		6			4				
Low-Code/No-Code Platforms	7	4							7										3					2	
Voice Marketing (Voice Search)	8	7		6	2	2	4		6				4	4	3		4		4	2	5	2	10		
Omnichannel Marketing	9	9									5										7		8		
Wearable Tech Integration		1																							
Chatbots		5		5	4									3					5	7	2		4		
Blockchain-Based Marketing Tools		6				7			4					7								4		4	
Mobile-First Solutions		7		8												5				4	11				
Push Notifications		10																							
IoT		11			3									6											
Paid Media			2					7																	
SEO Tools			3					4		3	6	3	2			7		1			6				
Email Marketing Platforms			4					3	8	2						3		2					7		
Beacon Technology					1									8											
Enhanced Video Marketing / Short-Form Video (Interactive Content Marketing)						4	2		1	6	4		5		6			7	2	3	8	3	9		3
Authentic Long-Form Content (Live Video/Streaming)							1	6												6			6		5
CRM Software								2		7															
Remarketing								8																	

(continued on next page)

Table 1. Continued.

Digital technologies for marketing	StartUs Insights	TechMagic	Fifty Five and Five	Sloboda Studio	NRG Phoenix	Elicit Digital	BusinessNewsDaily	Veza Digital	Simplilearn Solutions	Sprout Social, Inc.	Brand24	Determ	Serpstat	Martech Zone	Forbes	SNHU	99designs	Mageplaza	Intellipaat Blog	Search Engine Journal	Plerdy	Thirdeessential	DigitalMarketer	Bannerflow	GrowthForce
Content Management System (CMS)								9					7			2	3	4					3		
Project Management System (PMS)								10				6						5							
NFTs									3																
Conversion Optimisation Tools										4		2													
B2B marketing										5		4													
Graphic Creation Tools										8															
Geofencing													6												
Affiliate Marketing																1									
Pay-Per-Click (PPC)																6									

Findings from an initial analysis of a dataset created using open data from individual expert ratings (Table 1) indicate that digital technologies offer numerous opportunities for marketers and stakeholders to implement digital marketing strategies. However, the rankings provided by the experts appear to be random, making it difficult for users to find trendy solutions for their own businesses. Some experts prefer the latest technologies of the fourth wave of industrialization, while others suggest sticking to established MarTech tools with digital adaptations. Still, others recommend combining new solutions with traditional marketing communication methods. This range of expert opinions highlights the current uncertainty among businesses, who are hesitant to invest due to potential economic losses and unpredictable outcomes. To address this issue, it is important to implement an additional cross-ranking mechanism, which is described in stages 4 and 5 of this study, using mathematical principles.

The calculation of $FM_i, NTO1LP...NTO5LP, RRMF_i$ and finally RRP_i are made in tabular form Table 2.

In accordance with the proposed methodology, let's provide an example of calculations for the technological solution AI & ML.

According to the data in Table 1, the obtained value is $\sum_{i=1}^n IR_{AI \& ML} = 17$, which is the sum of the ratings from all expert organisations. In this case, the sum for the entire defined spectrum of technologies is $FM_y = 195$.

According to **Ошибка! Источник ссылки не найден.**:

$$RRMF_{AI \& ML} = \frac{17}{195} = 0,087.$$

According to the data in Table 1 for AI & ML obtain: NTO1LP=10, NTO2LP=2, NTO3LP=2, NTO4LP=0, NTO5LP=2. The data is entered into Table 2.

According to (2):

$$RRP_{AI \& ML} = 0,087 \times \left(\begin{matrix} 1 \times 10 + \frac{1}{2} \times 2 + \frac{1}{3} \times 2 + \\ + \frac{1}{4} \times 0 + \frac{1}{5} \times 2 \end{matrix} \right) = 1,051.$$

Perform a similar calculation for other technological solutions and record the results in Table 2

Table 2. Dataset of cross-ranking of individual ratings of expert organisations on the potential of solutions for the digital transformation of marketing communications. (Source: The table is created based on the methodology developed in the research by Vasylyuk-Zaitseva et al., 2023)

Digital technologies for marketing	Frequency of Mention	Relative Ranking by Mention Frequency	Number of Times Occupying the First Leading Position	Number of Times Occupying the Second Leading Position	Number of Times Occupying the Third-Leading Position	Number of Times Occupying the Fourth Leading Position	Number of Times Occupying the Fifth Leading Position	Relative Ranking by Priority
AI & ML	17	0.087	10	2	2	0	2	1.051
VR/AR/MR, Extended Reality	16	0.082	1	5	1	1	2	0.367
Social Commerce (Influencer Marketing)	21	0.108	4	2	3	0	8	0.817
Consumer Privacy (Personalised Marketing)	13	0.067	0	1	3	2	0	0.131
Web3 Marketing (DeFi Technologies)	3	0.015	1	0	0	0	1	0.018
Big Data & Analytics (Web Analytics)	15	0.077	3	0	2	3	2	0.368
Low-Code/No-Code Platforms	5	0.026	0	1	1	1	0	0.027
Voice Marketing (Voice Search)	16	0.082	0	4	1	5	1	0.306
Omnichannel Marketing	5	0.026	0	0	0	0	1	0.005
Wearable Tech Integration	1	0.005	1	0	0	0	0	0.005
Chatbots	8	0.041	0	1	1	2	3	0.078
Blockchain-Based Marketing Tools	6	0.031	0	0	0	3	0	0.022
Mobile-First Solutions	5	0.026	0	0	0	1	1	0.011
Push Notifications	1	0.005	0	0	0	0	0	0.000
IoT	3	0.015	0	0	1	0	0	0.005
Paid Media	2	0.010	0	1	0	0	0	0.005
SEO Tools	9	0.046	1	1	3	1	0	0.126
Email Marketing Platforms	7	0.036	0	2	2	1	0	0.068
Beacon Technology	2	0.010	1	0	0	0	0	0.010
Enhanced Video Marketing / Short-Form Video (Interactive Content Marketing)	14	0.072	1	2	3	2	1	0.263
Authentic Long-Form Content (Live Video/Streaming)	5	0.026	1	0	0	0	1	0.031
CRM Software	2	0.010	0	1	0	0	0	0.005
Remarketing	1	0.005	0	0	0	0	0	0.000
Content Management System (CMS)	6	0.031	0	1	2	1	0	0.043
Project Management System (PMS)	3	0.015	0	0	0	0	1	0.003
NFTs	1	0.005	0	0	1	0	0	0.002
Conversion Optimisation Tools	2	0.010	0	1	0	1	0	0.008
B2B marketing	2	0.010	0	0	0	1	1	0.005
Graphic Creation Tools	1	0.005	0	0	0	0	0	0.000
Geofencing	1	0.005	0	0	0	0	0	0.000
Affiliate Marketing	1	0.005	1	0	0	0	0	0.005
Pay-Per-Click (PPC)	1	0.005	0	0	0	0	0	0.000

According to the calculated dataset (Table 2), it is possible to approximate the median of individual rankings, with some differences between the functions $RRMF_i$ and RRP_i . Given that certain digital technologies have received very low relative and priority cross-ratings, we set the limit parameters below which the relevant digital solutions are not taken into account (3) (Vasylyuk-Zaitseva et al., 2023):

$$RRMF_i \leq 0,025; RRP_i \leq 0,02. \tag{3}$$

The application of the limit filter allowed us to identify 15 digital technologies that, according to the cross-median ranking of expert organisations' opinions, received the most favourable assessments in terms of the potential for transformational impact on the marketing communications industry Figure 1.

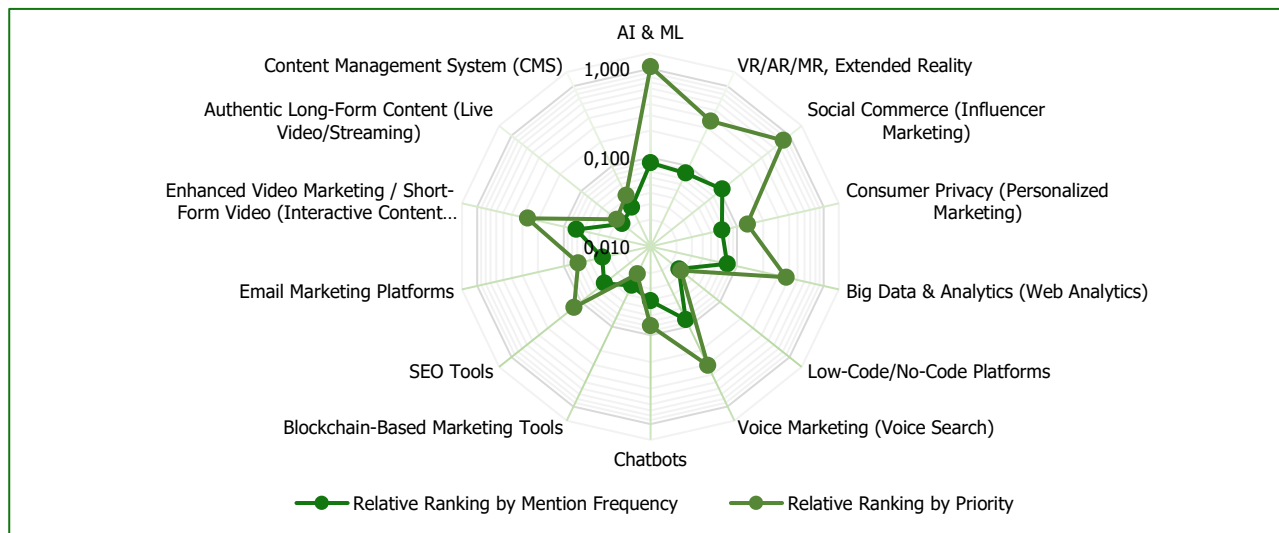


Figure 1. Determining the optimal set of digital technologies for modernising marketing communications that have the greatest potential for investment in digital marketing strategies. (Source: The graph is created based on the methodology developed in the research by Vasylyuk-Zaitseva et al., 2023)

According to the data obtained from Figure 1, the ideal combination of digital tools for marketing communication's transformation has been determined:

- AI & ML, which provides results in automation and analytics;
- Social Commerce (Influencer Marketing), which yields results in integration and e-commerce;
- Big Data & Analytics (Web Analytics), which provides results in analytics and marketing strategies;
- VR/AR/MR, Extended Reality, which yields results in immersive technologies;
- Voice Marketing (Voice Search), which provides results in user interaction;
- Enhanced Video Marketing / Short-Form Video (Interactive Content Marketing), which yields results in user perception.

From the optimal selection of digital tools, we can draw the following conclusions:

- Experts in the marketing industry recognize that AI, machine learning, and neural networks are the future of the field. Investing in this area of digital modernization is appropriate as it will significantly automate marketing.
- The difference between the ranking based on frequency of mention (leader - Social Commerce) and the ranking based on priority (leader - AI & ML) demonstrates the influence of current marketing organization experiences. Social media platforms, including influencer marketing, have a strong integration with e-commerce currently. However, the cross-rating analysis reveals current trends in digital marketing, which are driven by the implementation of AI technologies in marketing communications processes.
- Big Data & Analytics (Web Analytics) takes a central stage in the cross-expert rating, as it is a specialized digital technology used for analytical research in marketing strategy development.

Experts also see the importance of immersive technologies such as VR/AR/MR, Extended Reality and Voice Marketing (Voice Search), and Enhanced Video Marketing/Short-Form Video (Interactive Content Marketing). These technologies can drastically change user interaction and marketing communications, enhancing the perception of marketing products.

The incorporation of highly conversion-oriented digital tools in marketing campaigns not only modernizes marketing practices but also serves as a strategic approach to mitigate financial risks. These tools enhance efficiency, elevate customer engagement, and offer valuable analytics for informed decision-making. Specifically, conversion-oriented tools like AI & ML facilitate precise targeting and optimization of advertising budgets, thereby reducing the risk of failures and inefficient spending. Big Data & Analytics play a crucial role in understanding consumer trends and forecasting demand, thereby mitigating risks associated with excess inventory or untimely supplies. Social commerce and influencer marketing, when effectively utilized, contribute to increased sales through established audience relationships, diminishing the risk of failure and fostering customer loyalty. The strategic and effective deployment of digital tools enables businesses to measure ROI (Return on Investment) more accurately, a pivotal factor in ensuring financial stability. Incorporating conversion-oriented tools in marketing strategies allows for more efficient use of credit resources, thus minimizing the risk of debt overload. In summary, the judicious use of digital tools in marketing campaigns significantly contributes to financial stability by ensuring resource efficiency and minimizing risks in the financial realm of a business or organization.

Therefore, an optimal set of digital solutions has been determined, consisting of AI automation, AI analytics, and immersive technologies. Based on this, we can forecast the potential impact of these digital technologies on the marketing industry using Table 3.

Table 3. Forecasting the potential impact of a specific set of solutions for the digital transformation of the marketing sphere.

Digital technology	Organisational impact	Commercial impact	Impact on consumers	Impact on marketing development
AI & ML	Implementing AI & ML can improve the automation of marketing tasks such as data analysis and content personalisation. Large companies can take a big step forward in using these technologies to support their marketing strategies.	The use of AI & ML can improve budget forecasting and optimisation, which can lead to increased efficiency of marketing campaigns.	The personalisation provided by AI can make consumers more satisfied as they receive content and offers that are more relevant to their needs.	Makes marketing more research-based and data-driven.
Social Commerce (Influencer Marketing)	Promotes cooperation with influencers and the development of interactive social media campaigns.	Influencer marketing can help you reach a larger audience and increase sales through recommendations from influencers.	Consumers trust recommendations from influencers, so this can have a positive impact on their decision to buy a product.	It opens up new opportunities for building interaction and partnerships with influential people.
Big Data & Analytics (Web Analytics)	The use of big data and analytics helps manufacturers understand consumer behaviour and the effectiveness of advertising campaigns.	Allows marketers to make better decisions about advertising resources and budgets.	Consumers can receive more personalised offers and recommendations.	Makes marketing more research-based and data-driven.
VR/AR/MR, Extended Reality	The introduction of VR/AR/MR can help create immersive content and customer engagement.	Provides an opportunity to demonstrate products and services in a virtual environment.	Provides innovative and engaging experiences for consumers.	It opens up new opportunities for creating interactive and effective content.
Voice Marketing (Voice Search)	Contributes to the modernisation of the user interface to create effective communication between consumers and marketing products	It can change the way consumers search for and buy products.	It provides a more convenient and faster way to get information and make purchases.	It is a continuation of the technology of integrating natural language into the digital environment of AI and automation.
Enhanced Video Marketing / Short-Form Video (Interactive Content Marketing)	Promotes the development of interactive and engaging video content.	Provides an opportunity to engage the audience with short and engaging videos.	Consumers respond to short and engaging video content.	It provides a new way to interact and engage the audience.

Thus, it becomes evident that the primary direction for advancement in the marketing industry lies in the evolution of immersive strategies. These strategies focus on enhancing user engagement through principles such as personalization, user experience, extensive analytics, integration of artificial intelligence (AI), and bridging the communication gap between consumers and marketing content. This, in turn, contributes to the reduction of financial risks for businesses and organizations that engage in leveraging credit funds for investing in the digital transformation of their marketing campaigns and strategies.

DISCUSSION

The study findings indicate that the optimal set of solutions for the digital transformation of marketing communications, based on a cross-median expert rating, consists of the following technologies ranked in order: AI & ML, Social Commerce (Influencer Marketing), Big Data & Analytics (Web Analytics), VR/AR/MR (Extended Reality), Voice Marketing (Voice Search), and Enhanced Video Marketing/Short-Form Video (Interactive Content Marketing). Experts identify AI technologies as the primary driver for the future development of global marketing. The analysis of rankings by frequency of mention and priority highlights the significance of integrating social media and influencer marketing with e-commerce for marketing organizations. Additionally, the cross-rating reveals the relevance of AI in marketing communications. Combining these approaches could be the key to future success, promoting innovation and enhancing efficiency in audience engagement.

Analytics tools and immersive environments are leading the way in modernizing the marketing sector by revolutionizing the way customers interact with content.

Sangarathas (2023) research introduces a groundbreaking method to diminish the intention-behavior gap in adopting marketing technologies (MarTech) within the financial sector (FinTech). The novel concept of "current pre-experience" (CPEX) is identified as a pivotal factor influencing the shift from intention to actual user behaviour in MarTech within the financial services context. The study suggests that the efficacy of customer interaction in FinTech significantly relies on pre-experiences throughout various stages of their engagement with technologies. In practical terms, the research recommends FinTech marketers concentrate on enhancing pre-experiences in MarTech to narrow the gap between user intention and actual behaviour. This involves improving organizational reputation, leveraging visualization, and providing support to stimulate user intentions in the financial technology realm. This not only diminishes the intention-behavior gap but also activates practical strategies for FinTech marketers to enrich user interaction in the marketing technologies domain. While Sangarathas (2023) explores the relationships between MarTech and FinTech, the obtained results lack practical recommendations for reducing financial risks through the modernization of marketing strategies, significantly diminishing the practical value of the examined publication.

Utomo, Budihantho & Listyorini (2022) research explores how shifts in the business environment drive fashion-based Small and Medium Enterprises (SMEs) in Yogyakarta and Semarang to adopt fintech and marketing technology for enhanced marketing performance. Analyzing data from 100 SMEs through purposive sampling and using WarpPLS, the findings reveal that market orientation significantly influences fintech and online-based marketing technology adoption. However, the study notes that market orientation doesn't directly impact marketing performance. Instead, it emphasizes the substantial positive effects of utilizing fintech and online-based marketing technology on enhancing marketing performance. While recognizing limitations in measuring marketing performance comprehensively, the study calls for further research to examine performance indicators and better understand the relationship between market orientation, technology adoption, and marketing performance in SMEs. The explored connection between the marketing and finance sectors in the publication lacks practical implications in ensuring the financial stability and security of organizations and enterprises. Instead, this study demonstrates effective results in reducing financial risks arising from the engagement of credit funds for the modernization and digital transformation of marketing strategies.

Al-Dmour et al. (2020) study aimed to explore the influence of marketing knowledge management (MKM) on the performance of Jordanian commercial banks, incorporating the mediating aspect of Fintech innovation. While previous research has acknowledged a significant correlation between MKM and bank performance, this study innovatively contributes by empirically testing the mediating impact of Fintech innovation. The results unveiled a positive impact of MKM on bank performance, with Fintech innovation playing a partial mediating role. Recommendations advocate for commercial banks to prioritize knowledge management practices, fostering a culture of knowledge management among employees to enhance financial innovation and overall performance. The study encourages further research to validate and delve into the mediating role of Fintech innovation in similar contexts and across diverse sectors. This study only presents one aspect of the process of investing in the digital transformation of marketing strategies, specifically highlighting the advantages of applying innovative solutions for the banking sector. However, the researchers do not identify or provide potential solutions for the issues related to misdirected investments, which pose corresponding risks for companies and organizations that utilize credit funds to implement their modern marketing strategies.

It is important to note that while Malthouse & Copulsky's (2023) study highlights the potential of AI tools to modernize marketing, it lacks a comprehensive analysis of other relevant digital technologies. Lou, Taylor & Zhou (2023) emphasize the significant influence that social media and influencers have on the marketing industry. Their study focuses on analyzing the audience's satisfaction when interacting with influencers on various platforms and examines how these factors impact the influencer-advocate relationship and advertising outcomes. To achieve this, Lou, Taylor & Zhou (2023) developed a

set of criteria based on the principles of parasocial relationship (PSR) evaluation, which enables the prediction of the effectiveness of marketing communications on social media platforms involving influencers. Although their study is limited to a single aspect of the digital transformation of global marketing, it is noteworthy that Lou, Taylor & Zhou (2023) have presented an intriguing model for assessing PSR that can potentially be integrated into other areas of research.

In a similar vein, Bhanushali et al. (2023) highlight the prominent role of digital analytical tools, specifically Big Data & Analytics (Web Analytics), in the modernization of the marketing sector. The authors propose a comprehensive integration concept for analytical tools into the marketing communications system, which expands on the theory of enterprise resources and their utilization. This concept revolves around three key resources: organizational capital, human resources, and physical resources. The enhancement of adaptive capabilities involves three processes: data collection and storage on customer behaviour, deriving insights from this data, and utilizing it for strategic planning. Furthermore, Bhanushali et al. (2023) underscore the specific resources necessary to ensure the benefits derived from employing Big Data. Although their study examines a specific aspect of the digital marketing transformation, Bhanushali et al. (2023) offer practical recommendations for implementing analytical tools to enhance marketing strategies. These recommendations complement the current study, which provides a broader and more substantial overview of investment directions for the advancement of global marketing.

Zeng, Xing & Jin (2023) support the importance of studying immersive technologies in the modernization and development of marketing communications. They provide empirical evidence that implementing VR/AR/MR, Extended Reality enhances the communicative capacity of brand marketing. Zeng, Xing & Jin (2023) identify four types of brand experiences – entertainment, aesthetic, educational, and emulations of real experiences and demonstrate their impact on consumer-brand relationships, consumer satisfaction, and purchase intentions. They also emphasize the role of perceived brand authenticity in moderating this relationship. Thus, their research supports the use of immersive technologies in marketing and complements the findings of the current study.

Similarly, Hu et al. (2023) discuss the influence of AI technologies on the dynamics of consumer-marketing communication interfaces, particularly in terms of natural language processing through listening and speech synthesis. They find that consumers are more positive towards AI assistants' ability to synthesize speech than their ability to listen to natural speech. This discrepancy could undermine trust in voice assistants and reduce willingness to accept product recommendations and make purchases through voice assistants, hindering the development of voice marketing. Hu et al. (2023) suggest that companies with significant resources should focus on developing more effective listening abilities of AI assistants to increase congruence, while businesses with limited financial resources may consider reducing investments in making voice assistants' speech sound more natural to improve congruence. Therefore, their study provides practical insights to complement the findings of the current study, despite the limitations of other digital transformation technologies in marketing communications.

Dong et al. (2023) examined the effectiveness of short and interactive videos as a key marketing communication channel. By analyzing the user responses to 10,240 short Weibo videos (with a total duration of 238.645 hours) from 122 well-known brands, the authors identified several key factors contributing to successful marketing video content, including content relevance, information relevance, storytelling, and emotionality. Additionally, the study established a correlation between the timing of video content consumption and its effectiveness in attracting consumers. Notably, the authors found that videos released in the morning had a positive impact on consumers compared to those released at other times of the day. These findings offer valuable insights for brands and businesses utilizing short-form videos for marketing purposes, emphasizing the significance of selecting appropriate content and release timing to enhance consumer engagement. Overall, the study conducted by Dong et al. (2023) provides empirical evidence and practical guidance for leveraging Enhanced Video Marketing/Short-Form Video (Interactive Content Marketing) technology in the digital transformation of global marketing, complementing the current study's findings (Digital marketing vs traditional marketing statistics and trends in 2023 – Gitnux, 2023). Overall, the various publications on the impact of digital technologies on the marketing communications industry and global marketing can be categorized into two main influences. On one hand, they have a positive influence by exploring specific areas of digitalization solutions. On the other hand, they have a negative influence due to the lack of systematization and oversaturation in the market.

For instance, this study identified a market saturation of digital marketing offers, which poses challenges for stakeholders who need to allocate additional resources and time for analytical research. However, this current study stands out thanks to its comprehensive approach, providing a valuable practical tool for potential investors and the future development of the digital marketing industry. At the same time, this study demonstrates practical opportunities for reducing and mitigating financial risks associated with engaging in credit-funded investments by companies and organizations seeking to enhance profitability and conversion through the modernization and digital transformation of marketing campaigns and strategies.

CONCLUSIONS

In conclusion, the meticulous examination of the integration of digital technologies into modern marketing communication processes not only underscores the risk of oversaturation in the supply market but also emphasizes the potential ramifications for financial misdirection, necessitating additional analytical research for prospective investors and stakeholders. Recognizing this challenge, the study has successfully crafted and tested a mechanism designed to discern trends in the development of digital transformation tools within the marketing communications industry and the broader global marketing sphere. Anchored in analytical principles endorsed by 25 reputable expert organizations, this mechanism has yielded a comprehensive set of 32 digital marketing solutions.

Using the devised methodology, the set of digital proposals underwent rigorous ranking, culminating in the identification of six optimal technological solutions with the highest potential for catalyzing digital transformation in marketing communications. These include AI & ML, Social Commerce (Influencer Marketing), Big Data & Analytics (Web Analytics), VR/AR/MR (Extended Reality), Voice Marketing (Voice Search), and Enhanced Video Marketing/Short-Form Video (Interactive Content Marketing).

Concurrently, the research offers practical insights into the realm of financial risk mitigation linked to credit-financed investments for businesses and organizations seeking enhanced profitability and conversion through the modernization and digital transformation of their marketing endeavours.

In summation, the research underscores the paramount importance of a thorough examination of financial dimensions in the implementation of digital technologies within marketing communication. This entails a detailed analysis of budget allocations and access to financial resources, emerging as a linchpin in the strategic planning of enterprises actively embracing digital marketing strategies. Particularly noteworthy is the need for research directed at diminishing financial and credit risks associated with the deployment of new marketing technologies. This is primarily achieved by determining the optimal investment-attractive and conversion-centric digital marketing tools and technologies.

Looking ahead, the trajectory of global marketing is poised to be dominated by immersive strategies, heavily incorporating AI technologies and prioritizing consumer engagement. This discerned trend carries significant financial implications, offering a means to curtail potential risks tied to misguided investments and proving advantageous for all stakeholders involved. Future research endeavours aim to formulate a comprehensive strategy for implementing the optimal set of digital marketing communication tools, accompanied by the development of practical mechanisms to enhance marketing efficiency within the context of this global evolutionary trend. This strategic direction is expected to further address and optimize the financial landscape of businesses navigating the dynamic realm of digital transformation in marketing.

ADDITIONAL INFORMATION

AUTHOR CONTRIBUTIONS

All authors have contributed equally.

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Кузик О., Кабанова О., Чирва Г., Власенко Д., Комарницька Г.

ВПЛИВ ЦИФРОВИХ ТЕХНОЛОГІЙ НА ЕФЕКТИВНІСТЬ МАРКЕТИНГОВОЇ КОМУНІКАЦІЇ: ТРЕНДИ ТА ПЕРСПЕКТИВИ

Мета дослідження полягає в ідентифікації оптимальних цифрових маркетингових технологій, які будуть найбільш привабливими для інвестицій, на основі аналізу тенденційного перехресно-пріоритетного ранжування. У цьому дослідженні створено та протестовано механізм для виявлення тенденцій розвитку цифрових технологій у галузі маркетингових комунікацій і глобального маркетингу. Цей механізм базується на аналітичних принципах та використовує дані від 25 релевантних експертних організацій. На основі індивідуальних рейтингів цих організацій було сформовано множину цифрових рішень у кількості 32 пропозицій. За допомогою розробленої методології цей набір цифрових рішень було ранжовано з виділенням 6 оптимальних технологічних рішень, що мають найбільший потенціал для цифрової трансформації маркетингових комунікацій. Різниця між відносним ранжуванням за частотою згадування (з домінуючим Social Commerce (Influencer Marketing)) і відносним рейтингом за пріоритетом (з домінуючим AI & ML) указує на вплив досвіду маркетингових організацій. Ця різниця пояснюється тим, що на сьогоднішні платформи соціальних медіа, включаючи інфлюенс-маркетинг, тісно інтегруються у сферу електронної комерції. Однак перехресний рейтинг виявив актуальні тенденції розвитку цифрового маркетингу, які визначаються впровадженням технологій ШІ в процеси маркетингових комунікацій. Установлено, що залучення кредитних коштів для розгортання модернізованих сучасних маркетингових кампаній і стратегій впливає на фінансову безпеку таких організацій. При цьому застосування оптимальних конверсійних цифрових інструментів маркетингу дозволяє значно знизити фінансові ризики та підвищити прибутковість компаній. Установлено основний напрям майбутнього розвитку глобального маркетингу – імерсивні стратегії, що ґрунтуються на глибокій інтеграції та широкому використанні ШІ-технологій і спрямовані на підвищення зацікавленості та залученості споживачів. Практичність дослідження полягає у формуванні інструмента редукції ризиків хибно спрямованих інвестицій, воно є корисним для широкого загалу стейкхолдерів. У подальшому доцільно дослідити практичні механізми імплементації визначених цифрових рішень у процеси глобального маркетингу з формуванням відповідної деталізованої стратегії.

Ключові слова: MarTech, FinTech, AI & ML, соціальна комерція, інфлюенсер-маркетинг, великі дані та аналітика, веб-аналітика, VR/AR/MR, розширена реальність, голосовий маркетинг, інтерактивний контент-маркетинг, зниження фінансових і кредитних ризиків

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