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PROSPECTS FOR USING AUGMENTED AND VIRTUAL REALITY  
TECHNOLOGIES IN ADVERTISING  
(USING THE EXAMPLE OF THE TOURISM SECTOR)

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**Abstract**

This article analyzes the experience and prospects of using augmented and virtual reality technologies in advertising in the context of digital transformation of society. Based on the research of modern scientists and the experience of using augmented and virtual reality technologies in advertising, the main characteristics of these technologies are systematized, and conclusions are drawn about the advantages, risks, and prospects for their use in tourism advertising. This comparative analysis of these technologies in the context of their use in advertising can be a useful tool in the decision-making process for selecting optimal technologies for promoting specific goods and services. The idea proposed in this article for creating an interactive quest game using modern digital technologies can be adapted for other advertising purposes in the tourism sector.

**Keywords:** intelligent technologies; advertising; tourism; digital transformation of society.

ЖАРНАМАЛАРДА (ТУРИЗМ СЕКТОРЫНЫҢ МЫСАЛЫНДА)  
ТОЛЫҚТЫРЫЛҒАН ЖӘНЕ ВИРТУАЛДЫҚ ШЫНДЫҚ  
ТЕХНОЛОГИЯЛАРЫН ПАЙДАЛАНУ БОЛАШАҒЫ

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**Аңдатпа**

Мақалада қоғамның сандық трансформациясы жағдайында Жарнамалық қызметте кеңейтілген және Виртуалды шындық технологияларын қолдану тәжірибесі мен перспективалары талданады. Заманауи ғалымдардың зерттеулерін және жарнамада кеңейтілген және Виртуалды шындық технологияларын қолдану тәжірибесін талдау негізінде осы технологиялардың негізгі сипаттамалары жүйеленді, туризмді жарнамалау саласында оларды пайдаланудың артықшылықтары, тәуекелдері мен перспективалары туралы қорытындылар жасалды. Технологияларды жарнамада қолдану тұрғысынан салыстырмалы талдау нақты тауарлар мен қызметтерді жылжытудың оңтайлы технологияларын таңдау туралы шешім қабылдау процесінде пайдалы құрал бола алады. Осы мақалада ұсынылған заманауи цифрлық технологияларды

пайдалана отырып, интерактивті квест ойынын құру идеясы туризм саласындағы басқа жарнамалық міндеттерге бейімделуі мүмкін.

**Кілт сөздер:** зияткерлік технологиялар; жарнама; туризм, қоғамның сандық трансформациясы.

## ПЕРСПЕКТИВЫ ИСПОЛЬЗОВАНИЯ ТЕХНОЛОГИЙ ДОПОЛНЕННОЙ И ВИРТУАЛЬНОЙ РЕАЛЬНОСТИ В РЕКЛАМЕ (НА ПРИМЕРЕ СФЕРЫ ТУРИЗМА)

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### Аннотация

В статье анализируется опыт и перспективы использования технологий дополненной и виртуальной реальности в рекламной деятельности в условиях цифровой трансформации общества. На основе анализа исследований современных ученых и опыта применения технологий дополненной и виртуальной реальности в рекламе систематизированы основные характеристики данных технологий, сделаны выводы о преимуществах, рисках и перспективах их использования в сфере рекламы туризма. Проведенный сравнительный анализ технологий в контексте их использования в рекламе может явиться полезным инструментом в процессе принятия решений по выбору оптимальных технологий продвижения конкретных товаров и услуг. Предложенная в настоящей статье идея по созданию интерактивной квест-игры с использованием современных цифровых технологий может быть адаптирована для других рекламных задач в сфере туризма.

**Ключевые слова:** интеллектуальные технологии; реклама; туризм, цифровая трансформация общества.

### Introduction

The digital transformation of society, as the evolution of the stage of informatization, determines the need to transform the processes of advertising and marketing [1,2].

The digitalization of society has radically changed the landscape of the advertising industry. The consumer, overwhelmed by traditional advertising messages, develops "banner blindness" and is increasingly skeptical of intrusive communication formats. In these circumstances, the key task for brands is not just to inform, but to create a deep, emotionally colored interaction experience.

One of the solutions to this problem is the use of new immersive technologies - virtual and augmented reality [3-6], which make it possible to transfer consumers to the digital space or enrich their perception of the physical world.

The relevance of the research is due to the digitalization of society, the growth of investments in the virtual (VR) and augmented (AR) reality markets, and their active introduction into the practice of advertising activities of leading global brands. However, despite the growing interest, scientific understanding of the impact mechanisms and effectiveness of these technologies in advertising remains fragmentary.

Modern research shows that immersive technologies significantly affect consumer engagement, emotional perception of brands and decision-making processes in tourism marketing [7-10].

The purpose of the research presented in this article is a comprehensive analysis of the use of VR and AR technologies in advertising, identifying their advantages, limitations and prospects for their use using the example of the tourism sector of the Novosibirsk region.

#### Materials and research methods

The methodological approaches of the study focused on studying the experience of using augmented and virtual reality tools in the advertising activities of specific campaigns. The methodological basis is the dialectical method of cognition, methods of system analysis, and methods of comparison.

The empirical base of the study consists of a complex of various sources, domestic and foreign, allowing to reveal the subject of the study and come to certain conclusions.

#### Research results

Interactive advertising is a format of digital advertising distributed through interactive communication channels, the purpose of which is to involve a potential target audience in the advertising process in the form of direct creative user interaction with an advertising message using a specific game tool [1,2,7].

Virtual, augmented and mixed reality are powerful technologies that allow us to "replace" real life with the perception of virtual life, artificially stimulating human feelings in order to accept another version of reality.

The evolution of human immersion in the virtual world is shown in Figure 1, where with each new stage a person moves further into digital reality.

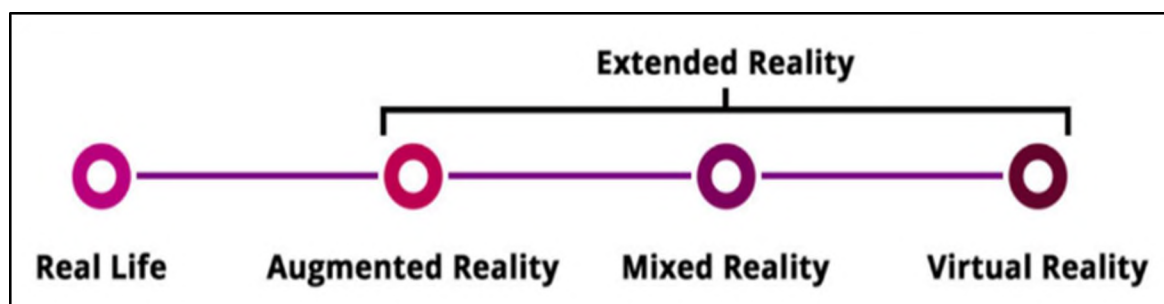


Fig. 1. Evolution of reality levels in the context of digital technologies [3]

Based on the analysis of research by modern scientists [4-8,11,12], the authors systematize the main characteristics of augmented and virtual realities and present them in comparative table 1.

Table 1. Comparison of AR and VR by various parameters

Parameter	Augmented Reality (AR)	Virtual Reality (VR)
The principle of operation	Superimposing digital objects on the real world through special technical devices	Full immersion of the user into an artificially created digital world
Access devices	Smartphones, tablets, AR glasses (Apple Vision Pro)	Virtual Reality helmets (HTC Vive Pro 2), controllers

The main purpose of advertising	Increased sales conversion, reduced returns, customer engagement and retention at the product review stage	Creating a deep emotional contact with the brand, fully immersing yourself in the story, involves the human senses and perceptions
Target audience	Wide reach, mass consumer	A niche, more trained and specialized audience
Implementation costs	For example, you can start by using filters in social networks and artificial intelligence technologies.	Very high, requires expensive equipment, qualified personnel for maintenance and configuration
Examples	Virtual fitting of clothes and selection of images for the type and style of the user (Lamoda); "animated" product advertising, when pointing the smartphone camera at a special QR code opens a virtual product model with real proportions (Faberlic, Fig. 2); interactive filters/masks on social networks	Virtual tours are actively used by hoteliers to demonstrate the territory of their hotel and room stock (Rixos Krasnaya Polyana Sochi, fig. 3); immersive presentations: a test drive of new car models (Volkswagen); virtual organization of space and furniture in housing (IKEA Place)

The conducted comparative analysis of technologies in the context of their use for advertising purposes can be a useful tool in the decision-making process on choosing the optimal technologies for promoting specific goods and services.

For example, augmented reality technologies can be used effectively if the goal is to influence the customer in the decision-making process about the appropriateness of the purchase. The technology allows you to reach a wide audience with minimal effort.

Using virtual reality technologies is effective if the goal is to create a unique and unforgettable brand image and evoke strong consumer emotions. These technologies are suitable for the presentation of cars, expensive equipment, real estate or the organization of unique virtual events.

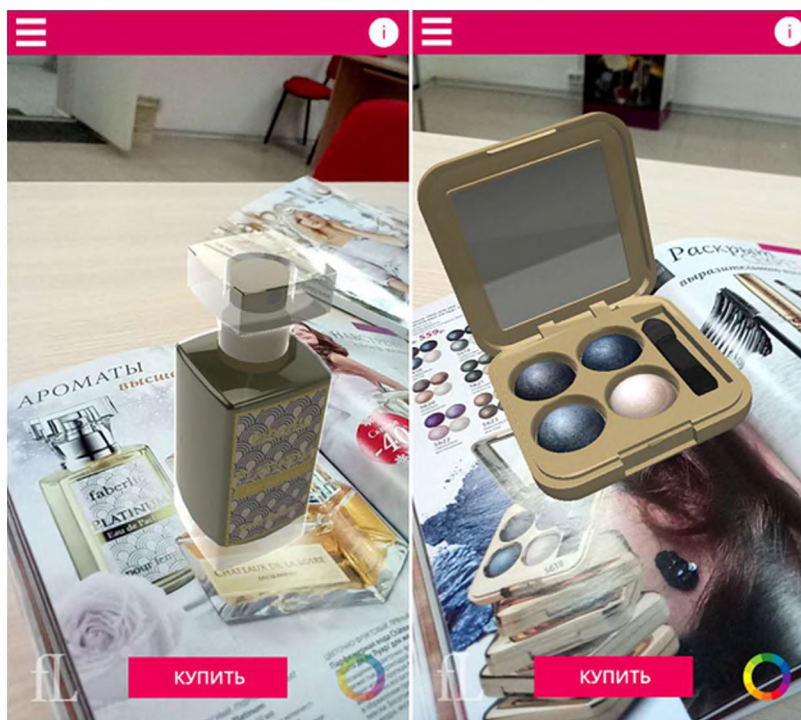


Fig. 2. An example of using AR technology by Faberlic brand [9]

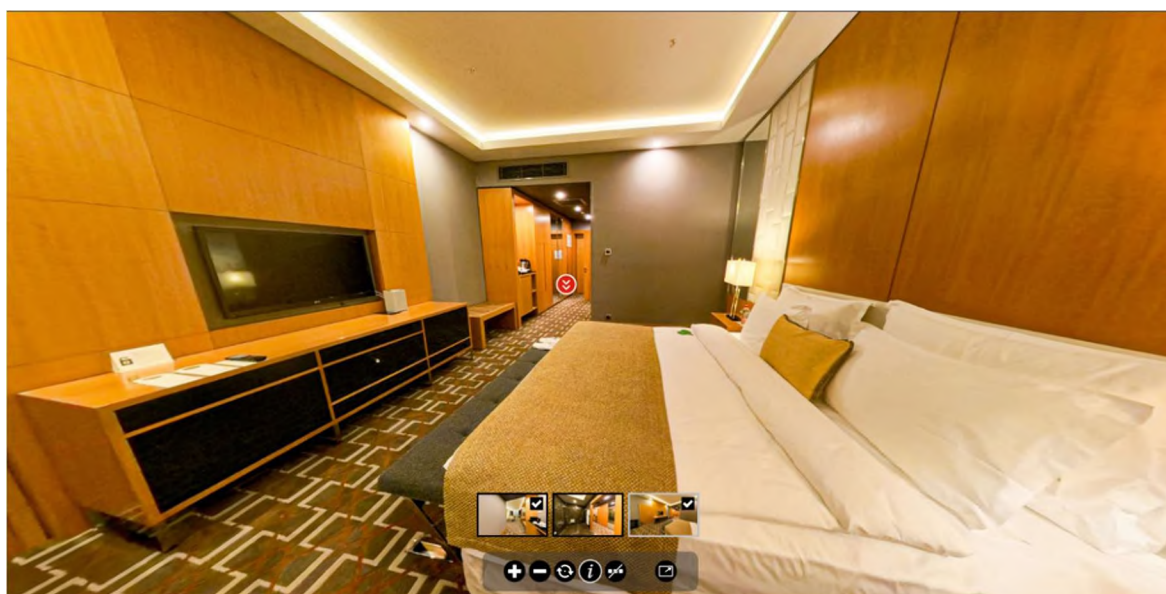


Fig. 3. An example of using VR technology at the 5\* Rixos Krasnaya Polyana Sochi hotel [10]

Interactive technologies provide a number of key advantages for their use in advertising as a brand promotion tool. In particular, due to the deep involvement of users in active interaction with the content (not passive, as in most cases). The memorability of the advertising context is significantly improved by facilitating an emotional and interactive experience. It is created by VR/AR technologies and stored in memory much better and easier than static

advertising, due to bright and moving images significantly improves memorability and emotional engagement [9,13-15].

Emotional connection immersiveness promotes empathy and the formation of positive associations, which directly affects the loyalty of potential customers.

Personalization of the experience allows you to quickly and easily adapt content to the actions and preferences of a particular user.

In addition to the prospects, the problems of introducing VR/AR into advertising should also be taken into account, as a number of factors may hinder this. For example, high advertising development costs (creating high-quality VR/AR content requires significant investments in software, 3D modeling, design, and more) may hinder this [6,12,16].

The VR entry barrier for potential consumers is another obstacle to getting a full and high-quality VR experience. Firstly, expensive equipment is needed, which limits the range of the target audience. Secondly, some consumers fear for the security and confidentiality of their data. AR and VR technologies are quite new and often require access to device data or login through registration, which raises concerns among users.

### Discussion

The practical application options for AR and VR technologies can be diverse and depend on the target audience and the budget of the advertising campaign. Immersive technologies are increasingly used for destination marketing and cultural tourism promotion [17-19].

Let's consider the application options for AR and VR technologies using the example of popularization of the cultural and leisure segment in the Novosibirsk region.

As an example, let's imagine the development process of the quest tour "The Keys of Time in Novonikolaevsk", which will essentially be an AR game.

To implement the idea, you can use an application that will allow you to read cultural objects and show old archive photos. Photos can be "brought to life" using neural networks, thereby simulating a journey into the past.

The concept of such a quest will be that tourists become time agents who have arrived in Novosibirsk to restore the chronology of the key events of the founding of the city.

Concept: the historical memory of the city has been erased by an evil scientist from Akademgorodok; players, collecting mysterious artifacts and solving exciting puzzles, will be able to return the city to its heritage.

The goal of the game is to complete a certain route, collect 5 virtual artifacts and activate them in the main square so that the fragments of the erased memory of the city return to their places and give the city its former brightness.

The target audience is tourists of Novosibirsk, caring residents of the city.

The necessary equipment is a smartphone with the quest app installed, Internet access and special AR glasses for greater realism.

In the course of the research presented in this article, a specific route for the quest game was developed (Table 2).

Table 2. The route of the AR-quest «The Keys of time of Novonikolaevsk»

Name of the object	The AR effect	Task	Decision	Historical background
Alexander Nevsky Cathedral	The cathedral is illuminated by a golden glow on	This is the first stone church in Novo-	On the smartphone screen on one	Right! The Alexander Nevsky Cathedral

	<p>the central dome. The inscription: "a new object has been unlocked" The right chrono-key hovers at the very top of the dome.</p>	<p>Nikolaevsk. To get the chrono key of the "Holy Faith", find the year of its consecration on the wall of the building and enter the last digit of the year multiplied by two.</p>	<p>of the walls of the cathedral, the number 9 will not be very noticeable, which is the key to the solution. The answer is: 1899. You must enter this date in the response field. Receipt: chrono-key "Holy Faith"</p>	<p>was founded in 1897 in memory of Emperor Alexander III and consecrated in 1899. It became the spiritual center of the city under construction [8].</p>
<p>100-Flat Building</p>	<p>The building is disassembled into geometric shapes in the style of constructivism and then reassembled. The chrono key is visible above the main entrance.</p>	<p>This architectural masterpiece received the highest award at the World Exhibition. Who was its creator, the architect? Hint: Take a look at the plaque.</p>	<p>Through the camera, a rebus will be brightly highlighted on the commemorative plaque, in which the surname Kryachkov is hidden, Figure 4. Receipt: the chrono key "Facade of the past"</p>	<p>Right! Architect Andrey Kryachkov. His 100-Flat Building is a hallmark of Novosibirsk constructivism, which won the Grand Prix in Paris in 1937 [8].</p>
<p>Chapel of St. Nicholas the Wonderworker</p>	<p>An old wooden version of the chapel appears on the site of the modern chapel, and a map of the Russian Empire is projected on the ground.</p>	<p>The chapel marked the geographical center of Siberia. To get the "Return to the Source" chrono key, it is necessary to rebuild the chapel: align the contours of the old and new chapels in AR space.</p>	<p>Mini-game: The player moves the phone to overlay the outline of the old chapel on the real one. After an exact match, a bell will ring. Receipt: the chrono key "Return to the source".</p>	<p>Well done! You have restored the chapel, which was destroyed in the 1930s and rebuilt in 1993 as a monument to the dead and a symbol of the rebirth of the city [8].</p>

Pervomaisky Square / Museum of Local Lore	The square comes to life: shadows of people from different eras from the Russian Empire to the present appear	We need to go deeper into the square. This place has seen fairs, rallies, simple walks, and musical performances. Your task is to capture the spirit of Unity. Take a photo with shadows of people from different eras in the frame at the same time.	The tourist is looking for a certain angle to complete the task. Receipt: the chrono key "Unity of the Spirit".	Great job! Pervomaisky Square is a witness to all the main events of the city, a place where its history and people are inextricably linked. The decision on the construction of the square was made in 1929, the square itself was laid out only by 1932 [8].
NOVAT	Previously collected pearls fly out and hover over the dome of the theater, where the last part of the mystery is hidden.	To combine all the chrono keys, solve the last riddle: how many columns adorn its mighty facade?	The AR model on the device highlights the columns. Answer: 24 pieces. Getting: the chrono key "Heart of the City" and completing the quest.	You did the job! NOVAT – the largest theater in Russia, was built in 1931-1941. The main feature is a huge dome with a diameter of 60 meters and a height of 35 meters [8].



Fig. 4. Rebus for the object – 100-Flat Building

To visualize the tour, Figure 5 shows the route diagram of the interactive quest game «The Key of Time in Novonikolaevsk».

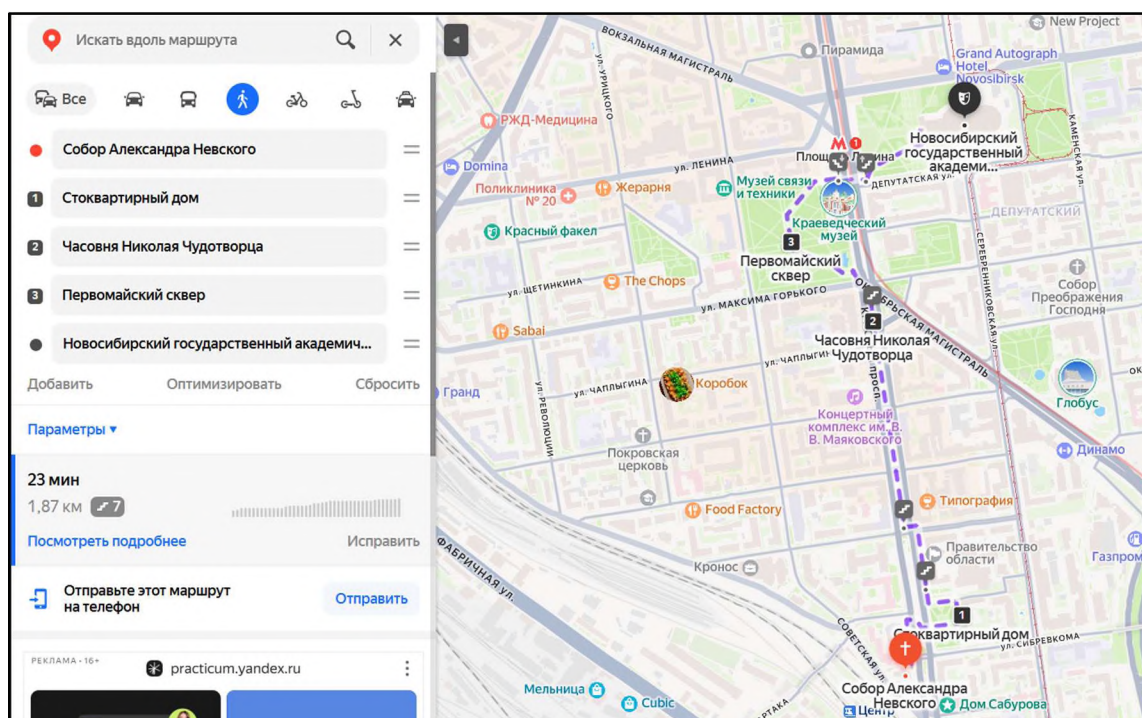


Fig. 5. The route of the quest game "The Keys of time of Novonikolaevsk"

The finale may be the merging of the chrono keys and combining them into a single vintage watch. A 3D video series will be launched, where horsemen of the past rush through the theater square, the first wooden houses grow, then Soviet buildings are replaced, and finally, the city turns into a modern metropolis. The end credits may look like this: "Mission accomplished! The temporary flow of Novosibirsk has been restored. Thanks to you, the history of the city has regained its vivid image. You haven't just visited some of the city's many attractions – you've revived their memories. Congratulations, Agent X! The memory of the city will now remain in your hands. Take care of her and keep her safe."

Digital rewards for completing such an interactive tour can be, for example: a gallery with 3D models of all the collected artifacts, as well as the attractions to which they belong, will open in the application with quest tours.;

For the successful completion of the quest, tourists will be able to receive an individual discount on visits to any museum in the city, exhibitions, excursions or theatrical performances; the opportunity to share your success in the form of an AR show on your social networks under the special hashtag #КлючиВремениНовониколаевска (#TheKeysofTimeofNovonikolaevsk).

### Conclusion

Virtual and augmented reality technologies allow us to move from advertising as an information tool to advertising as a tool for creating a unique consumer experience. Despite the fact that there are still psychological and technological barriers to mass technology adoption, the trend towards immersiveness is irreversible.

The consumer journey is currently undergoing a transformation, with VR and AR erasing key barriers to product acquisition. They effectively bridge the gap between interest and

solution, providing unprecedented opportunities for product testing, customization, and visualization in the context of a consumer's daily life.

In the future, with the development of technology and cheaper equipment, VR and AR will become not an exotic addition, but a standard communication channel in digital marketing ecosystems [14,18,20], blurring the line between the digital and physical world. Further research on this topic should focus on the study of immersive campaigns and the long-term impact of such experiences on consumer behavior.

The idea proposed in this article to create an interactive quest game using AR technology will allow in the long term to create a unique tourism brand of Novosibirsk as a technological city and can be adapted for other advertising tasks in the field of tourism.

In conclusion, it is worth noting that virtual and augmented reality technologies open up a wide range of innovative ways for marketers to interact with their target audience. At the same time, the effective use of these tools requires professional expertise and a balanced approach.

The analysis of the above suggests that the pace of creation of methodological approaches to the use of modern digital solutions in marketing significantly lags behind the speed of development of the technologies themselves. Consequently, scientific research in the field of forming a methodological basis for the application of digital innovations in the field of marketing and advertising is an extremely sought-after and promising area of research today.

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