

Gevorg Orbelyan

PhD

*PHD student (researcher) at European University of Armenia and curator at Yerevan History Museum
orbelyangevorg@gmail.com*

THE ROLE OF INFORMATION TECHNOLOGIES IN TOURISM AND ADVANCING MUSEUM DEVELOPMENT IN YEREVAN (ARMENIA)*

Keywords: museums, innovations, smart technologies, development, Virtual Reality (VR), Augmented Reality (AR), Artificial Intelligences (AI), Yerevan city

Introduction

The integration of information technologies (IT) has become a driving force behind the transformation of various sectors, including tourism and cultural heritage. In Yerevan, Armenia, a city known for its rich history and vibrant culture, IT is playing an increasingly significant role in enhancing the accessibility, promotion, and preservation of its attractions. The integration of information technologies (IT) is transforming multiple industries globally, and its impact is particularly significant in the fields of tourism and cultural heritage. In Yerevan, Armenia – a city renowned for its ancient history, vibrant cultural scene, and unique architectural landscape – IT is rapidly becoming a key driver in enhancing the accessibility, promotion, and preservation of its cultural attractions. This shift is reshaping the way both locals and visitors experience the city, particularly in the realms of museums, cultural institutions, and tourism.

In recent years, the role of IT in tourism has expanded far beyond traditional brochures and guidebooks. With the proliferation of digital platforms, Yerevan's attractions are now accessible through a variety of online tools designed to enhance the traveler experience. For example, the availability of online booking platforms, immersive virtual tours, and geolocation – based apps has revolutionized the way tourists discover and explore the city. These innovations offer both international and domestic visitors seamless, personalized travel experiences – empowering them to plan, engage, and connect with the city's offerings in ways that were previously unimaginable.

At the same time, museums and cultural institutions in Yerevan are embracing digital technologies to transform their operations and public engagement strategies. The adoption of mobile applications, interactive websites, and cutting-edge audio guides enables institutions to connect with a broader, more diverse audience. Through these advancements, museums can offer enriched storytelling experiences, making Armenia's rich cultural heritage accessible to both local and global audiences. Moreover, these tech-

* Ստացվել է 26.11.2024թ., ուղարկվել է գրախոսության՝ 13.02.2025թ., ընդունվել է տպագրության՝ 13.08.2025թ.:

nological tools cater to the growing demand from tech-savvy generations who expect digital interactivity as part of their cultural experiences. This change is especially noteworthy because it not only updates the ways in which cultural heritage is shared and enjoyed, but it also helps to ensure that tourism is sustainable and that Armenia's past is preserved for future generations. Digital tools are enabling cultural institutions to share their collections with a global audience, helping to protect valuable artifacts while making them more accessible for study and enjoyment. In the context of Yerevan, this growing digital infrastructure is positioning the city as a dynamic cultural and technological hub, where ancient history and modern innovation meet.

The integration of IT has also contributed to sustainable tourism development. By digitizing services and promoting virtual experiences, the environmental impact of traditional tourism is reduced. Furthermore, IT-driven analytics help museums and tourism boards better understand visitor preferences, allowing for more targeted and effective marketing strategies.

By embracing IT, Yerevan is successfully balancing tradition and innovation, ensuring its cultural heritage is preserved while remaining relevant to modern audiences. This digital transformation positions Yerevan as a leading destination for cultural tourism and innovation.

Literature review

The role of information technologies (IT) in advancing tourism and museum development has been extensively studied in global and regional contexts. Scholars agree that IT serves as a critical driver of innovation, accessibility, and sustainability in the cultural and tourism sectors. According to (Buhalis, Law 2008), IT has revolutionized the tourism industry by enhancing marketing strategies, improving operational efficiency, and creating more personalized visitor experiences. Online booking systems, geolocation services, and virtual tours are now standard tools that cater to tech-savvy travelers (Leung et al. 2013) emphasize the importance of social media in tourism promotion, highlighting how platforms like Instagram and Facebook enable destinations to engage global audiences and build brand identity.

The application of IT in museums has also been a focus of research. For instance (Parry 2007) argues that digital technologies, such as augmented reality (AR) and virtual reality (VR), create immersive experiences that attract diverse audiences and deepen visitor engagement. Similarly, Huvila (2013) notes that digital archives and virtual exhibitions expand access to collections, ensuring that heritage remains accessible to a global audience. In the literature studied it underscores IT's transformative potential in tourism and museums, particularly in regions like Yerevan, where the fusion of technology and culture can boost both local development and international appeal. In museums, the most common innovations are changes in certain service aspects and advances in the technology used (digital catalogues, virtual visits or web publications), (Camarero, Garrido and Vicente 2011). By adding virtual content to the real-world image, it provides the user with an experience without being separated from the real environment Augmented reality, created through software and digital devices, allows digital content created on the physical world to coexist (Craig 2013).

Encouraging modern and innovation, access to technology, and improving digital skills are important for fully using technology's benefits. These technological changes also significantly affect the various spheres like culture and tourism. As it is known the concept "digital technologies" refers to a set and framework of many intelligence and innovative technologies that enable connection, communications, and automation in the era of Industry 4.0, such as big data analytics, the Internet of Things, and cloud computing (Ying L. et al 2020). It is known, that, the involvement of technology in the museum sector began in 1960, and a range of presenting styles have been utilized in digital museums (Pic. 1). Initially, there was a preference for static display approaches that employed text or graphics, like digital collections or books. However, more effective, captivating, and communicative exhibition techniques have emerged because of several media and communication technologies (Amato et al 2017).

Introducing the role of the latest technologies in museums and entertainment venues, especially in the context of museums, we cannot fail to address smart city solutions as well. A "smart city" is a city that uses technology to connect its services and engage with its residents. It can use different technologies to manage schools, libraries, transportation, hospitals, and public safety efficiently. The goal of creating a "smart city" is to improve life by using technology to enhance services and meet people's needs. In this context, businesses develop technology, and as cities grow, new ideas and technologies emerge. Technology also changes how city governments work with communities and city services. The term "smart" has become popular to describe development using information and communication technology (ICT), which has also changed tourism, making travel experiences better.

Moreover, the integration of smart city concepts with smart tourism is crucial for creating a seamless and enriched experience for both residents and visitors. Museums, as significant cultural and educational institutions, play a vital role in this ecosystem. Here are some ways in which museums can leverage smart tourism solutions to enhance their offerings.

Enhancing Visitor Experience

Museums are not merely repositories of artifacts; they are dynamic spaces for cultural communication, learning, and engagement. Effective communication plays a pivotal role in enhancing visitor experiences, ensuring that museums serve as bridges between heritage and contemporary audiences. By leveraging a variety of interpretive tools, digital technologies, and visitor-centric strategies, museums can transform their spaces into environments that foster deeper connections and understanding (Poghosyan 2018).

Interactive Exhibits: Utilizing augmented reality (AR) and virtual reality (VR) to create immersive experiences. Visitors can interact with exhibits in new ways, such as seeing a historical artifact in its original context or viewing a 3D reconstruction of a historical site.

Mobile Apps and Digital Guides: Museums can develop mobile applications that offer self-guided tours, interactive maps, and detailed information about exhibits. These apps can include multimedia content, such as videos and audio guides, enhancing the learning experience.

Personalization: Using data analytics and visitor profiling, museums can offer personalized recommendations for exhibits and events. Visitors can receive tailored content based on their interests and previous interactions.

Smart Tourism (Y Li et al 2017) is a key part of smart city ideas, using technology to improve different aspects of the tourism industry. The main aim of smart tourism is to make travel experiences easier, more sustainable, and enjoyable for tourists while making tourism businesses and destinations work better. Using smart tourism ideas can make tourism more competitive, improve how resources are managed, and help make tourism more sustainable. It means using digital technologies to make tourism more efficient, sustainable, and enjoyable for tourists, businesses, and destinations, with the goal of creating smarter, more connected, and innovative tourism systems.

The main parts of smart tourism include:

The city's IT infrastructure should incorporate high-speed internet, mobile connectivity, and data analytics to improve communication and access. To attract citizens and tourists, providing city-wide Wi-Fi access is a great initiative. This ensures that affordable and reliable internet connectivity is available from anywhere in the city.

Using Data Collection and Analysis allows organizations and government bodies to use large datasets for analyzing and understanding tourist behavior, preferences, and trends. This data-driven approach supports making informed and mindful decisions.

The Internet of Things (IoT) involves integrating IoT devices like sensors and smart devices to gather real-time data on different aspects of tourism, including general management, energy usage, and transportation.

Mobile Technology allows the use of mobile applications and platforms to deliver personalized, location-based information to tourists, improving navigation and offering interactive experiences.

Artificial Intelligence (AI) involves using advanced technologies in chatbots, virtual assistants, and personalized recommendations to improve customer service and engagement.

AI refers to computer systems or programs that can do tasks typically done by humans. The idea is to create machines that can learn, solve problems, understand language, and adapt to different situations.

AI systems analyze data, adjust to changes, and get better over time. These technologies are changing how businesses interact with customers by offering more efficient and personalized services.

Smart Infrastructure involves integrating technology into the physical infrastructure of tourist destinations, such as smart buildings, energy-efficient systems, and sustainable practices. This integration aims to enhance efficiency, safety, and sustainability. Smart buildings use advanced systems for energy management and security, while sustainable practices promote responsible resource use. By incorporating smart infrastructure, tourist destinations can improve visitor experiences and contribute to environmental conservation efforts.

Augmented Reality (AR) and Virtual Reality (VR) make tourism more exciting by offering immersive and interactive experiences. With AR and VR, tourists can engage

with their surroundings in fun and memorable ways during their travels. Similarly, other scholars emphasize the importance of "visitor-centric" approaches using digital technology to engage and enhance interaction (Hijazi, Baharin 2022).

As previously mentioned, information technology plays a key role in globalization processes. Today, it is possible to virtually "visit" any country with a single touch, explore world cities and museums, and experience entertainment venues. Communication with friends, colleagues, and relatives living anywhere in the world has become seamless. Additionally, access to an online encyclopedia is readily available, offering insights from scientists currently working in various fields, facilitating continuous self-development and improvement.

The use of technological innovations in these areas can enhance the tourist experience through digital platforms. Many countries have implemented standards for tourist authentication and identity verification using specific apps up until 2023.

As mentioned above, cities and tourism organizations are investing significant resources in smart system initiatives because information technologies are crucial for a city's competitiveness as a tourist destination. Moreover, cities worldwide are increasingly embracing the concept of smart tourism cities and related strategies to promote a sustainable environment.

In particular, for cities dealing with residents' negative perceptions of tourism, a smart tourism city helps address this challenge by creating urban spaces that both residents and visitors can enjoy together.

Trends in the world

Information technology (IT) integration in museums around the world has grown to be a major trend that is changing how people view, access, and protect cultural material. To improve visitor experiences, make collections more accessible, and preserve priceless artifacts for future generations, museums are implementing a range of digital technologies, including smartphone apps, virtual reality (VR), augmented reality (AR), and interactive displays. As an example, we can cite the Louvre Museum. The Louvre has embraced technology with an innovative mobile application that offers guided tours and detailed information about its vast collection. Visitors can use augmented reality (AR) to navigate the museum and enjoy immersive 360-degree virtual tours of iconic works, such as the Mona Lisa. This application ensures that even those unable to visit the museum in person can experience its masterpieces from afar. The British Museum (London, UK) The British Museum has leveraged virtual reality (VR) and interactive online platforms to engage a global audience. Their "Museum of the World" project allows users to explore the museum's collection in a timeline format, linking artifacts from different cultures and time periods. This innovative project provides a more dynamic and engaging way for audiences to interact with the museum's vast collections. The Smithsonian Institution, particularly the National Museum of Natural History, has incorporated VR headsets for virtual fossil excavations, enabling users to experience interactive storytelling. Additionally, the Smithsonian offers AR applications that bring artifacts to life and extensive digital archives and virtual exhibitions, making its world-renowned collections

globally accessible. The Rijksmuseum has digitized its collection with high-resolution images, allowing visitors to zoom in and explore intricate details of works by masters such as Rembrandt and Vermeer. This digital archive not only enhances the learning experience for visitors but also makes the museum's collection accessible to audiences worldwide, preserving masterpieces in a virtual format. Museum of New Zealand Te Papa Tongarewa (Wellington, New Zealand) Te Papa uses immersive projection mapping and interactive exhibits to present New Zealand's indigenous Maori culture in innovative ways. The museum's Gallipoli: The Scale of Our War exhibit combines life-size sculptures, 3D modeling, and digital storytelling to create a powerful and engaging experience for visitors. This use of technology brings history to life, making it more accessible and emotionally impactful. The Acropolis Museum uses augmented reality (AR) to digitally reconstruct ancient structures and provide an immersive historical experience. Visitors can visualize how monuments like the Parthenon once looked, with AR-supported digital interpretations offering a deeper understanding of the rich historical context.

The above mentioned are notable examples of how museums around the world have successfully integrated these technologies: how IT integration is becoming more and more common at museums across the globe. In addition to improving accessibility and visitor experiences, museums that embrace digital technologies also help to preserve and promote cultural heritage globally. This trend illustrates how IT has the ability to completely transform how we engage with art and history and reflects the growing desire for immersive, technologically advanced museum experiences. The museum scene is changing as a result of these developments, which present new chances for museums to interact with a variety of audiences, draw in younger, tech-savvy generations, and reach beyond conventional geographic borders. It is evident that museums are embracing technology as its use continues to develop in order to guarantee that cultural heritage is durable, accessible, and relevant in the digital age. The impact of global trends, such as digitalization and the rise of experiential travel, has transformed urban tourism dynamics. Research by Cohen (2014) discusses how technology influences tourist behaviors and expectations. Yerevan, like many cities, must adapt to these trends to remain competitive in the global tourism market (Armutcu et al 2023). In Yerevan, addressing these issues is vital to ensure the long-term viability of urban tourism (Orbelyan 2024).

Virtual visits or virtual excursions (tourism)

In recent years, Information Technology (IT) has sparked a new trend in tourism called Virtual Tourism, which lets people explore various destinations and cultural sites through digital means like virtual reality (VR), augmented reality (AR), or online platforms.

Virtual tourism has become especially popular when travel is limited, like during the Covid-19 pandemic. It's a great option for people who can't travel in person. While it's not the same as being somewhere in real life, virtual tourism is a fun and affordable way to experience new cultures. For example, by watching videos, people can virtually visit destinations, check out museum exhibits, hear sounds, and almost feel like you're actually there.

Virtual tourism tools have been widely used in recent years for marketing purposes, often taking the form of short-lived video clips.

The COVID-19 pandemic further accelerated the adoption of virtual tours and the creation of short videos in many countries. In virtual tourism, one can distinguish virtual reality (VR), which creates a 3D environment often referred to as a "virtual environment," allowing users to navigate, see, and interact with objects that appear real.

Types of virtual tours include:

- Free tours
- 3D walking tours
- Linked tours, consisting of a series of 360° photos (similar to Google Street View)
- 360° videos
- 3D video tours that offer a guided (but non-interactive) tour of a specific area.

Case study in Yerevan city

In Yerevan, there are around 65 museums. Many smart solutions used in tourism sphere, such as audio-visual and virtual tour guides. Since 2011 many museums in Yerevan began to implement new and modern technologies in museums. One of the first was the holographic image of the great Armenian poet Hovhannes Tumanyan in the museum (Pic. 2). Another attractive technology with projection in the museum showcasing the history of Yerevan, where visitors can experience an animated show depicting old Yerevan using light and sound, on the model of the city of Yerevan comes "livable", is colored, the old names of the streets are highlighted, the carriages run, etc (Pic. 3).

Several museums offer 360-degree virtual tours where visitors can explore exhibits from their phones. By downloading the right app, tourists can listen to audio guides in different languages without needing a physical guide. With the app, once you've visited a museum, you'll get updates on new exhibitions and events. However, such applications are not yet available in Yerevan's museums. In contrast, the Yeghishe Charents Museum of Literature and Art in Yerevan offers a unique interactive experience. Visitors can explore Armenian musical instruments, their history, and listen to performances. In another section, visitors can engage with touchscreens to listen to readings by Papazyan and excerpts from "Anoush." Another exhibit features animations based on famous artworks. At the Martiros Saryan House-Museum, visitors can explore the artist's legacy through audiovisual and virtual guide, offering both reading and listening experiences. Additionally, the museum's website provides a 3D virtual tour (Pic. 4). Another interactive tool is used in Alexander Spendiaryan house museum, where the visitors have a chance conduct virtual orchestra on a virtual platform and develop conducting skills. This project aims to activate interest in classical music through alternative ways, introduce the construction of the symphony orchestra and to the role of the conductor, to increase the role of the museum as an informal educational environment with development of teamwork skills. (Pic. 5).

During large-scale urban festivals, technology plays a crucial role, not only in solving technical issues but also as a main attraction for visitors. For instance, in 2023, audio presentations were introduced as an innovative feature during the festival. At the re-

nowned "Yerevan Wine Days," the "YereWine Audio Performance" was a highlight, providing engaging stories and commentary to accompany wine tasting. Another attractive project "Talkcity" also is impressive project which launched in Yerevan started from 2022 and ideas creating city stories with special audio guide. (Pic. 6).

Recommended technology tools in Yerevan city

Augmented reality (AR) is a technology that enhances the real world with digital visuals, sounds, and sensory elements. It improves human perception by adding virtual images to reality, making information more engaging and understandable. The technical means it uses include Multimedia, 3D-Modelling, Real-time Tracking and Registration, Intelligent Interaction, Sensing and more. Its principle is to apply computer-generated virtual information, such as text, images, 3D models, music, video, etc., to the real world after simulation. In this way, the two kinds of information complement each other, thus achieving the enhancement of the real world (Yunqiang Chen et al 2019). AR has gained popularity in tourism because it helps hotels and tourism organizations showcase themselves effectively, offering customers detailed and immersive information. AR benefits not only hotels but also enhances experiences at attractions, historical sites, and cultural landmarks. Visitors with AR-enabled smartphones can use corresponding apps to access information about their surroundings. They can explore a place's history, see its changes over time, learn about architects and construction details, and more. These details are shown through videos, images, and sounds integrated into the environment. The creative possibilities of AR are vast, limited only by developers' imaginations.

Arloopa, a company based in Armenia, specializes in developing games and technologies using augmented and virtual reality. Founded in 2014, the company utilizes augmented reality, image recognition, and computer vision technologies to create immersive and interactive experiences. Arloopa also offers its own application, which enables users to meet and take photos with famous figures like the writer William Saroyan.

Another notable project by Arloopa is the Komitas Workspace VR exhibition hosted at the Komitas Museum-Institute. This virtual reality experience allows visitors to virtually explore Komitas Vardapet's workspace in Constantinople. The VR tour includes interactive elements that enable visitors to play Komitas' piano, browse his album, and interact with various interesting objects.

In the Aram Khachaturian House-Museum, visitors can use the Arloopa mobile application to explore the maps showing the countries Aram Khachaturian visited during his concert tours. They can also listen to fascinating stories about Khachatrian's encounters with famous personalities of the 20th century. With VR glasses, museum visitors can enter the composer's office and witness the creation process of a segment from the "Gayane" ballet titled "Dance with Swords".

Through VR, visitors observe Khachatrian actively engaged in creative work-playing, approaching his desk, contemplating, and taking notes accompanied by the music of "Dance with Swords" (Pic. 7).

At the Yeghishe Charents House-Museum, visitors can experience an animated, interactive AR image titled "The Last Journey of Charents to Eternity". Using the AR-

LOOPA app, visitors can discover the painting's history and learn about the contents of a barrel containing unique manuscripts.

In Erebuni historical and archaeological museum-reserve, visitors can travel back thousands of years and experience historical events using virtual reality (VR) glasses (Pic. 2). The museum offers special VR experiences where visitors can hear King Argishti talk about how the city was founded. This 6-minute virtual tour is available in Armenian, French, English, and Russian. With VR glasses, tourists can join an ancient Urartian ritual at the “Susi” temple in Erebuni, see the temple being built, and watch scribes write cuneiform letters. (Pic. 8).

Also, at the Museum of Russian Art in Yerevan, visitors can explore paintings using VR glasses. This is the first experience in the history of RA museums, where the visitor appears “inside” the painting (Pic. 9). Through virtual glasses the viewer will “walk” inside the “Zoo” created by great Russian artist Boris Grigoriev; he will see the park both with the artist’s and his own eyes, will have the opportunity to listen to the history of the painting in his preferred language (Armenian, English, Russian).

Artificial Intelligence in the tourism industry

NFT Technology, which combines the physical and digital worlds in tourism, breaks digital boundaries by digitizing physical items into NFTs. Armenia's first physical NFT space, featuring a gallery in Yerevan opened in 2023, allows the creation, purchase, and sale of NFTs using Armenian dram (AMD).

Currently, NFT collectors can acquire Sergei Parajanov's collage “Variation with shell on themes by Pinturicchio and Raphael”.

This famous collage by Parajanov is now available as a non-fungible token (NFT). The project involves Sergey Parajanov's house-museum 'Sharm Holding', augmented and virtual reality company “Arloopa”, Team Telecom Armenia, and AMCG marketing company. (Pic. 10).

Conclusion

The expanding use of modern information technologies in museum collection management, the creation of virtual museums, and the integration of digital technologies for visitors will undoubtedly have a positive impact, significantly enhancing the museum experience. The findings of this research suggest that recent advancements in technology have paved the way for a wide range of solutions aimed at developing and supporting digital museums. These innovations not only improve accessibility but also offer immersive and engaging experiences for visitors, enriching their understanding of cultural heritage.

Through extensive research into the museums of Yerevan, it is evident that the application of augmented reality (AR) and virtual reality (VR) is becoming increasingly common. These technologies are boosting cultural heritage exhibitions by providing visitors with interactive, dynamic ways to engage with artifacts and exhibits. Several museums in Yerevan are already adopting these tools to create more immersive experiences, allowing visitors to connect with the city’s rich cultural history in novel and compelling ways.

However, one significant gap in Yerevan's Museum sphere is the absence of any museum in Armenia that has its own dedicated mobile application for use within the museum itself. While many museums in Yerevan use QR codes inside their exhibition halls to link visitors to the museum's website, there are currently no museum-specific apps offering interactive features, digital tours, or personalized experiences directly within the museum environment. This represents a clear opportunity for growth in the development of advanced technological solutions that could further enhance the cultural engagement of visitors.

In conclusion, there is still a lot of room for improvement even though Yerevan has made great progress in integrating digital technologies into its museums. The future of museum experiences will be greatly influenced by the ongoing development and integration of interactive technologies like mobile applications, augmented reality, and virtual reality. As these technologies advance, they will help preserve Armenia's cultural legacy while also making sure that it is interesting and available to future generations. With these developments, Yerevan can establish itself as a pioneer in the digital revolution of museums, guaranteeing that its rich cultural heritage will continue to enlighten and inspire tourists from all over the world.

BIBLIOGRAPHY

- HIJAZI, BAHARIN 2022 – Hijazi A.N., Baherin A.H.A., The Effectiveness of Digital Technologies Used for the Visitor's Experience in Digital Museums. A Systematic Literature Review from the Last Two Decades, *The International Journal of Interactive Mobile Technologies*, Vienna, 2022, 16(16), 142–159.
- AMATO ET AL 2017 – Amato F., Moscato V., Picariello A., Colace F., De Santo M., Schreiber Fa., Big data meets digital cultural heritage: Design and implementation of SCRABS, a smart context-aware browsing assistant for cultural environments, *Journal on Computational Cultural Heritage*, New York, 2017, 10(1):6:1-6:23.
- ARMUTCU ET AL 2023 – Armutcu B., Tan A., Amponsah M., Parida S., Ramkissoon H., Tourist behaviour: The role of digital marketing and social media, *Acta Psychologica*, Amsterdam, 2023, 240.
- CAMARERO, GARRIDO, VICENTE 2011 – Camarero C., Garrido M.J.S., Vicente E., How cultural organizations' size and funding influence innovation and performance: The case of museums, *Journal of Cultural Economics*, Dordrecht, 2011, 35(4), 247–266.
- CRAIG 2013 – Craig A.B., *Understanding Augmented Reality: Concepts and Applications-Morgan Kaufmann (an imprint of Elsevier)*, San Francisco, 2013.
- LEUNG ET AL 2013 – Leung D., Van Hoof H., Law R., Buhalis D., Social Media in Tourism and Hospitality: A Literature Review, *Journal of Travel & Tourism Marketing*, Oxfordshire, 2013, 30 (1–2).
- BUHALIS, LAW 2008 – Buhalis D., Law R., Progress in Information Technology and Tourism Management: 20 Years on and 10 Years After the Internet—The State of eTourism Research, *Tourism Management*, Amsterdam, 2008, 29(4), 609–623.
- HUVILA 2013 – Huvila I., How a museum knows? Structures, work roles, and infrastructures of information work, *Journal of the Association for Information Science & Technology, Association for Information Science & Technology*, New Jersey, 2013, 64(7), 1375–1387.
- LI, DAI, CUI 2020 – Li Y, Dai J, Cui L., The impact of digital technologies on economic and environmental performance in the context of industry 4.0: A moderated mediation model, *International Journal of Production Economics*, Amsterdam, 2020.

- ORBELYAN 2024 – Orbelyan G., A comprehensive analysis of the factors that shape the structure of tourism in Yerevan, *Cross-Cultural Studies: Education and Science (CCS&ES)*, Yerevan, 2024, 9(III), 87–99.
- POGHOSYAN 2018 – Poghosyan D., *Museum as an Environment of Cultural Communication*, Yerevan, 2018.
- PARRY 2007 – Parry R.D., *Recoding the Museum: Digital Heritage and the Technologies of Change*, Oxfordshire, 2014.
- COHEN 2014 – Cohen S., Consumer behaviour in tourism: Concepts, influences and opportunities, *Current Issues in Tourism*, Oxfordshire, 2014.
- LI, HU, HUANG, DUAN – 2017, Li Y., Hu C., Huang C., Duan L., The concept of smart tourism in the context of tourism information services, *Tourism Management*, Amsterdam, 2017, 58, 293–300.
- CHEN ET AL 2019 – Chen Y., Wang Q., Chen H., Song X., An overview of augmented reality technology, *Journal of Physics Conference Series*, Bristol, 2019.

Electronic materials

- MARTIROS SARYAN HOUSE-MUSEUM – Martiros Saryan House-Museum, <https://360stories.com/armenia/place/martiros-sarian-house-museum/>, (date of last access 13.01.2025).
- ARAM KHACHATURIAN MUSEUM EDUCATIONAL PROGRAMS – Aram Khachaturian Museum Educational Programs, <https://akhachaturianmuseum.am/en/edu-programs/>, (date of last access 11.01.2025).
- PARAJANOV NFT PROJECT – Parajanov NFT Project, <https://parajanovnft.io/>, (date of last access 13.01.2025) VIRTUAL WORLD OF A MASTERPIECE, RUSSIAN ART MUSEUM - Virtual World of a Masterpiece, Russian Art Museum, <https://rusartmuseum.am/en/event/in-the-virtual-world-of-a-masterpiece/>, (date of last access 13.01.2025).
- SPENDIARYAN MUSEUM EDUCATIONAL PROGRAMS - Spendiaryan Museum Educational Programs, https://spendiaryanmuseum.am/htmls_eng/edu_6.html (date of last access 14.01.2025).
- YEREVAN TOURISM BLOG - Yerevan Tourism Blog, <https://visityerevan.am/blog/details/113/en/>, (date of last access 13.01.2025).
- ALIQ MEDIA ARTICLE - Aliq Media Article, <https://www.aliqmedia.am/2023/07/11/112061/>, (11 July 2023) (date of last access 13.01.2025).
- ARLOOPA WEBSITE – Arloopa Website, <https://www.arloopa.com/>, (date of last access 13.01.2025).
- YEREVAN HISTORY MUSEUM ARCHIVES – Yerevan History Museum Archives, <https://yhm.am/archives/6294>, (date of last access 13.01.2025).
- ԵՐԵՎԱՆ ՔԱՂԱՔԻ ՊԱՏՄՈՒԹՅԱՆ ԹԱՆԳԱՐԱՆԻ ԴԻՆԵՐԸ ԲԱՑ ԿԼԻՆԵՆ ՄԻՆՉԶԵՎ ԿԵՍԳԻՇԵՐ – Երևան քաղաքի պատմության թանգարանի դռները բաց կլինեն մինչև կեսգիշերը, <https://www.yerevan.am/hy/news/erewan-k-aghak-i-patmowt-yan-t-an-garani-drhner-bats-klinen-minch-ew-kesgisher/>, (17.05.2014).

Գևորգ Օրբելյան

Հայաստանի Եվրոպական համալսարանի ասպիրանտ
և Երևան քաղաքի պատմության թանգարանի գիտաշխատող
orbelyangevorg@gmail.com

ՏԵՂԵԿԱՏՎԱԿԱՆ ՏԵԽՆՈԼՈԳԻԱՆԵՐԻ ԴԵՐԸ ԵՐԵՎԱՆԻ ՉԲՈՍԱԾՐՁՈՒԹՅԱՆ ԵՎ ԹԱՆԳԱՐԱՆՆԵՐԻ ՉԱՐԳԱՑՄԱՆ ԳՐԾՈՒՄ

Հիմնաբառեր. թանգարաններ, նորարարություններ, խելացի տեխնոլոգիաներ, զարգացում, վիրտուալ իրականություն (VR), ընդլայնված իրականություն (AR), արհեստական բանականություն (AI), Երևան քաղաք:

Սույն հոդվածն անդրադառնում է Երևանի թանգարաններում տեխնոլոգիաների դերի և նշանակության ուսումնասիրմանը՝ ընդգծելով տեղեկատվական տեխնոլոգիաների կիրառումը մշակութային հաստատությունների զարգացման և միջազգային զբոսաշրջության մեջ նրանց դիրքավորման համար: Նորարարական տեխնոլոգիաները, ինչպիսիք են վիրտուալ իրականությունը (VR), ընդլայնված իրականությունը (AR) և արհեստական ինտելեկտը (AI), նպաստում են թանգարանային ոլորտի արդիականացմանը, այցելուների ներգրավմանը և մշակութային ժառանգության պահպանմանը: Հոդվածը ներկայացնում է Երևանի թանգարաններում տեխնոլոգիաների ներդրման հաջողված օրինակները՝ անդրադառնալով դրանց ազդեցությանը զբոսաշրջային ենթակառուցվածքների զարգացման, միջազգային շուկա մուտք գործելու և մշակութային արժեքների հանրահռչակման վրա: Տեխնոլոգիաների և նորարարությունների ինտեգրումը հնարավորություն է տալիս ստեղծել ավելի հասանելի, ինտերակտիվ և կայուն զբոսաշրջային միջավայր՝ նպաստելով թե՛ տեղական, թե՛ միջազգային մակարդակով ոլորտի զարգացմանը: Հոդվածի հիմքում ընկած է Երևանի թանգարաններում տարբեր տեխնոլոգիաների տեսական ներկայացումը, որոնք բարենպաստ միջավայրի ստեղծման միջոցով կարող են նպաստել թանգարանների զարգացմանը, պատմամշակութային ժառանգության պահպանմանն ու հանրահռչակմանը: Տեղեկատվական տեխնոլոգիաները (SS) կարևոր են դարձել Հայաստանում, Երևանում զբոսաշրջության զարգացման և թանգարանների արդիականացման գործում: Օգտագործելով SS-ը՝ Երևանի մշակութային հաստատությունները և զբոսաշրջության ոլորտը զգալիորեն մեծացրել են հասանելիությունն ու այցելուների ներգրավվածությունը:

Геворг Орбелян

Аспирант Европейского университета Армении и сотрудник Музея истории Еревана
orbelyangevorg@gmail.com

РОЛЬ ИНФОРМАЦИОННЫХ ТЕХНОЛОГИЙ В РАЗВИТИИ ТУРИЗМА И МУЗЕЕВ ЕРЕВАНА

Ключевые слова: музеи, инновации, интеллектуальные технологии, развитие, виртуальная реальность (VR), дополненная реальность (AR), искусственный интеллект (AI), город Ереван

Эта статья выявляет значение применения информационных технологий для развития туризма и музеев в Ереване. Такие инновационные технологии, как виртуальная реальность (VR), дополненная реальность (AR) и искусственный интеллект (AI) способствуют модернизации музейной сферы, вовлеченности посетителей и сохранению культурного наследия. В статье приводятся примеры удачного внедрения технологий в музеи Еревана, указывается на их влияние на развитие туристических инфраструктур, проникновение на международный рынок и на популяризацию культурных ценностей. Интеграция технологий и инноваций делает возможным создание более доступной, интерактивной и устойчивой туристической среды, способствуя развитию сферы на местном и международном уровне. Информационные технологии (ИТ) стали играть важную роль в развитии туризма и модернизации музеев в Ереване, столице Армении. Используя информационные технологии, культурные учреждения и туристический сектор Еревана значительно повысили вовлеченность посетителей и повысили доступность