

UZBEK ETHNO-CULTURAL HERITAGE IN THE DIGITAL SPACE: OPPORTUNITIES FOR PRESERVING, PROMOTING, AND TRANSMITTING TRADITIONS TO NEW GENERATIONS

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Abstract

This article examines the opportunities offered by digital technologies for safeguarding, documenting, promoting, and transmitting Uzbek ethno-cultural heritage across generations. The concept of intangible cultural heritage (ICH) is considered within the framework of the **2003 UNESCO Convention for the Safeguarding of the Intangible Cultural Heritage**. Particular attention is given to such elements of Uzbekistan's cultural heritage inscribed on UNESCO's Intangible Cultural Heritage Lists as Shashmaqom, Katta Ashula, Askiya, the Culture and Tradition of Palov, Lazgi, the Art of Bakhshi, the Art of Miniature, and traditional silk production and weaving practices.

The article analyzes the potential of digital archives, high-resolution audio and video documentation, 3D modeling, virtual museums, virtual and augmented reality (VR/AR), multimedia educational resources, and artificial intelligence (AI)-based digital guides. At the same time, it highlights the major risks associated with the digitization of cultural heritage, including the distortion of cultural authenticity, intellectual property concerns, insufficient community consent and participation, the digital divide, and excessive commercialization of cultural content.

The study argues that the digitization of Uzbek cultural heritage should not be understood merely as an archival process. Rather, it should be developed as an integrated ecosystem that connects **preservation, research, education, public engagement, and intergenerational transmission**. Such an approach would enable digital technologies to function not only as instruments for storing cultural information but also as dynamic mechanisms for ensuring the continued vitality and transmission of cultural heritage to future generations.

Keywords: *digital cultural heritage, intangible cultural heritage, Uzbek ethno-cultural heritage, digitization, virtual museum, 3D modeling, VR/AR, artificial intelligence, cultural authenticity, intergenerational transmission.*

INTRODUCTION

In the twenty-first century, digital technologies are fundamentally transforming the ways in which people create, preserve, access, interpret, and consume information. This transformation has had a direct impact on the cultural sphere, generating new mechanisms for safeguarding and transmitting traditional heritage. Today, preserving cultural heritage exclusively within museums, archives, libraries, or printed publications is no longer sufficient. Particularly in an environment where younger generations increasingly acquire information through digital platforms, ensuring the meaningful presence of national culture within the digital environment has become an important cultural and educational priority.

According to the **2003 UNESCO Convention for the Safeguarding of the Intangible Cultural Heritage**, intangible cultural heritage encompasses practices, knowledge, skills, and expressions recognized by communities, groups, and, in some cases, individuals as part of their cultural heritage¹. It includes oral traditions and expressions, performing arts, social practices, rituals and festive events, knowledge concerning nature and the universe, and traditional craftsmanship. From this perspective, the concept of “safeguarding” cannot be reduced to simply storing cultural materials in museums or archives. Within the UNESCO framework, safeguarding encompasses the identification, documentation, research, preservation, protection, promotion, and-most importantly-the transmission of heritage to future generations².

Uzbekistan possesses an exceptionally rich cultural heritage base in this regard. The country became a State Party to the 2003 UNESCO Convention in 2008. Today, a number of Uzbek cultural practices and traditions are represented on UNESCO’s Intangible Cultural Heritage Lists. These include Shashmaqom, Katta Ashula, Askiya, the Culture and Tradition of Palov, Lazgi, the Art of Bakhshi, the Art of Miniature, and traditional silk production and weaving practices. Therefore, the challenge is not simply to “upload national heritage to the Internet.” The more important scholarly and practical question is: **How can digital technologies transform Uzbek ethno-cultural heritage into a form**

¹ <https://www.unesco.org/en/legal-affairs/convention-safeguarding-intangible-cultural-heritage?utm>

² <https://ich.unesco.org/en/state/uzbekistan-UZ?info=elements-on-the-lists&utm>



that remains culturally authentic while becoming meaningful, accessible, engaging, and educationally valuable for younger generations?

The purpose of this article is to examine the potential of digital technologies for documenting, safeguarding, promoting, and transmitting Uzbek ethno-cultural heritage across generations and to develop practical approaches for organizing this process in an effective and sustainable manner. A defining characteristic of intangible cultural heritage is its **living nature**. For example, the distinctive techniques of pottery making, the performance traditions of a bakhshi, or a particular style of maqom performance cannot be fully preserved through textual description alone. This is because intangible heritage involves not only knowledge but also performance techniques, sound, movement, context, environment, and the master-apprentice relationship through which cultural knowledge is transmitted.

UNESCO likewise emphasizes that one of the fundamental characteristics of intangible cultural heritage is its continuous recreation by communities and its transmission from generation to generation³. Consequently, digitization cannot be limited to conventional scanning or textual recording. Different digital formats should be selected according to the specific characteristics of each type of heritage: **textual documentation** - for preserving history, terminology, meanings, and cultural context; **high-resolution photography** - for documenting objects, clothing, artworks, and examples of traditional craftsmanship; **audio recording** - for preserving songs, epics, oral traditions, and musical practices; **video documentation** - for recording performances, rituals, and craft-making processes; **3D scanning** - for transforming tangible cultural objects into accurate digital models; **Geographic Information Systems (GIS)** - for mapping cultural heritage sites and practices spatially; **digital archives** - for long-term preservation, management, and scholarly access to cultural information.

UNESCO's current work on **Digital Technologies** likewise demonstrates the growing use of digital mapping, 3D modeling, and online platforms as tools for safeguarding cultural heritage and transmitting it to future generations. This approach is particularly relevant to Uzbekistan, whose intangible cultural heritage encompasses diverse traditions including maqom, askiya, the culture of palov, Lazgi, the art of bakhshi, miniature art, and silk production. The digitization of Uzbekistan's cultural heritage should not rely on a single standardized methodology. Each heritage form requires a tailored documentation strategy. In Shashmaqom, Katta Ashula, and Bakhshi performance traditions, for example,

³ <https://www.unesco.org/en/articles/intangible-cultural-heritage?utm>



voice, rhythm, timbre, pronunciation, improvisation, and performance style are of central importance. Accordingly, the creation of high-quality audio and video archives is essential.

For instance, converting a bakhshi's epic performance solely into written text may result in the loss of significant elements of its artistic and performative character. A high-quality video recording, by contrast, can simultaneously preserve the performer's voice, pronunciation, musical instrument, gestures, movements, and performance environment. In fields such as pottery, copper and metalworking, jewelry making, carpet weaving, embroidery, and the production of atlas and adras textiles, not only the final product but also the **process through which it is created constitutes cultural knowledge**. The preservation of traditional atlas and adras production technologies at the Margilan Crafts Development Centre has been recognized by UNESCO as a **Good Safeguarding Practice**⁴. Building upon such experience, these technologies could be transferred into digital platforms through interactive documentation of each stage of production: **raw materials → preparation → processing → use of tools → pattern formation → finished product**.

Such a structure would make it possible not merely to display a traditional craft object but to preserve and communicate the knowledge, skills, sequence of operations, and cultural meanings embedded in its production. Archaeological objects, manuscripts, national costumes, musical instruments, and examples of traditional craftsmanship held in museums can be digitally preserved through 3D scanning⁵. Uzbekistan's official Digital Government portal notes that the country's museums contain extensive collections of folk applied arts, manuscripts, musical instruments, ethnographic objects, and archaeological artifacts.

Transforming such objects into high-quality digital models can substantially expand their potential for research, education, conservation, and virtual exhibition. A 3D model can enable researchers and students to examine an artifact from different perspectives without physically handling the original object. At the same time, virtual museums can make cultural heritage accessible to international audiences who may not have the opportunity to visit Uzbekistan in person. The existence of a digital archive does not automatically guarantee the promotion of cultural heritage. A collection of 5,000 digitized files will not, by itself, encourage young people to study and understand cultural traditions.

⁴ https://ich.unesco.org/en/state/uzbekistan-UZ?info=elements-on-the-lists&utm_source=chatgpt.com

⁵ https://www.digital.gov.uz/en/pages/museums?utm_source=chatgpt.com



For this reason, digital heritage policy should distinguish between **archiving and communication**. On the one hand, comprehensive databases should be developed for researchers and specialists. On the other hand, visually engaging, accessible, and interactive content should be created for broader audiences. The same scholarly information can be transformed for different audiences through a multi-level content model: **scholarly archive → academic article → infographic → three-minute educational video → short-form vertical video → interactive quiz**. In this model, social media should not be regarded as an end in itself. Rather, it should serve as a communication mechanism through which reliable cultural knowledge reaches different audiences in formats appropriate to their media habits.

The 2003 UNESCO Convention places particular emphasis on education and engagement with younger generations in safeguarding intangible cultural heritage. Article 14 of the Convention highlights the importance of developing educational, information, and awareness-raising programmes directed particularly toward young people⁶. From this perspective, Virtual Reality (VR) and Augmented Reality (AR) offer significant opportunities. For example, a student could: explore a historical urban environment virtually; examine a museum object as a three-dimensional digital model; interactively study elements of traditional national clothing; observe traditional craft production step by step; obtain contextual information through a virtual cultural guide. However, technology alone does not improve educational quality. Without an appropriate pedagogical methodology, VR may become little more than an entertainment tool.

Therefore, every interactive element in digital cultural education should be connected to a clearly defined learning objective. For example, instead of the vague objective “**The student visited Samarkand virtually,**” a more meaningful and measurable learning outcome would be: “**The student can identify three key architectural characteristics of the Timurid period.**” This shift-from technological novelty to measurable educational outcomes-is essential for transforming digital cultural experiences into genuine learning opportunities. In recent years, artificial intelligence has created new opportunities for processing and interpreting digital cultural heritage. AI can potentially assist with: converting historical manuscripts into searchable digital text through Optical Character Recognition (OCR); transcribing audio recordings; developing digital search systems in the Uzbek language; automatically categorizing museum

⁶ https://ich.unesco.org/en/convention?utm_source=chatgpt.com



objects; creating multilingual virtual guides; developing educational chatbots focused on cultural heritage.

However, this field also presents serious risks. AI systems may misinterpret cultural information, particularly oral traditions, local terminology, dialects, culturally specific expressions, and historical contexts. Automated models may reproduce inaccuracies or generate interpretations that appear convincing but lack scholarly or cultural validity. For this reason, AI-generated cultural content should be subject to a structured verification process: **AI generation/processing → expert review → validation by communities or heritage bearers → publication on an open platform**. Such a model can help ensure that technological efficiency does not come at the expense of cultural accuracy and authenticity.

The opportunities offered by digital technologies must be assessed alongside their potential risks. When cultural traditions are excessively simplified for the purpose of increasing their popularity, their original meanings and cultural contexts may be weakened or lost. For example, adapting a complex ritual into a 30-second video may make it attractive to a digital audience, but the process may simultaneously remove important historical, social, symbolic, and religious contexts. The result may be visually appealing while providing an incomplete or distorted representation of the tradition. Another fundamental question concerns **who digitizes cultural heritage and who controls its digital representation**. Article 15 of the UNESCO Convention emphasizes the need for broad participation of communities, groups, and individuals that create, maintain, and transmit intangible cultural heritage in safeguarding activities⁷. Therefore, the simple model **museum → IT company → Internet** is insufficient. A more sustainable model would be based on cooperation among: **community → researcher → museum → IT specialist → educational institution**.

This approach recognizes that cultural heritage should not merely be technologically captured from communities but should be digitized **with communities and for communities**, while also making it accessible to researchers, educators, and the wider public. Digital content is relatively easy to copy, reproduce, modify, and redistribute. Consequently, the digitization of audio, video, photographs, traditional knowledge, and community-based cultural expressions requires clear consideration of copyright, licensing, access rights, and the collective rights associated with traditional knowledge.

⁷ https://ich.unesco.org/en/convention?utm_source=chatgpt.com



The issue of the **digital divide** must also be taken seriously. Not all users have access to high-speed Internet, modern smartphones, computers, or VR equipment. Digital heritage platforms should therefore provide several levels of access: **high-quality version + lightweight mobile version + offline/local educational version**. Such an inclusive approach would prevent digital heritage initiatives from becoming accessible only to technologically privileged audiences. Based on the analysis above, Uzbekistan could develop a unified national digital cultural heritage platform. Its proposed architecture could consist of the following interconnected stages: **Stage 1 - Documentation. Photography + audio + video + 3D + textual documentation**. The first stage should establish a comprehensive digital record of cultural heritage elements using multiple complementary formats. **Stage 2 - Scholarly Verification. Historian + ethnographer + art historian + linguist + heritage bearer**. Every digitized cultural element should undergo multidisciplinary scholarly verification and, where appropriate, validation by the communities that maintain the tradition. **Stage 3 - Digital Archive**. All materials should be preserved together with standardized metadata, including information on provenance, date, location, cultural context, creator or performer, language, community, and usage rights. **Stage 4 - Public Platform**. An open-access database should be developed in **Uzbek, Russian, and English**, enabling both domestic and international audiences to explore Uzbekistan's cultural heritage. **Stage 5 - Educational Platform**. Interactive courses and educational resources should be developed for schools and universities, integrating digital heritage materials into history, anthropology, ethnology, art, music, and cultural studies curricula. **Stage 6 - AI and Virtual Cultural Guide**. Users should be able to ask questions and receive reliable, source-based answers about cultural heritage. AI-based systems should operate under expert supervision and should clearly distinguish verified information from generated interpretations. **Stage 7 - Community Participation**. Craftspeople, artists, local residents, performers, tradition bearers, and other community members should be able to contribute materials and participate in decisions concerning how their heritage is represented digitally. This model is consistent with UNESCO's broader approach to intangible cultural heritage, particularly its emphasis on identification, documentation, research, education, transmission, and meaningful community participation.

CONCLUSION

Digital technologies should not be understood merely as new technical instruments for preserving Uzbek ethno-cultural heritage. They have the



potential to transform the very way cultural heritage is documented, researched, interpreted, taught, experienced, and transmitted to future generations. The large number and diversity of Uzbekistan's intangible cultural heritage elements recognized by UNESCO demonstrate that the country possesses a substantial scholarly and practical foundation for developing a comprehensive digital cultural heritage ecosystem. At the same time, digitization must not be confused with **"museumification"**. The fundamental characteristic of intangible cultural heritage is its living nature-its continuous recreation by communities and its transmission from one generation to another. UNESCO likewise places particular emphasis on community participation and education as essential components of safeguarding.

Therefore, Uzbekistan's digital cultural heritage policy should move beyond the paradigm of **"digitization for preservation"** toward a broader paradigm of **"digitization for preservation, research, education, transmission, participation, and cultural renewal."** The most effective model would not stop at digitizing materials held in museums and archives. Instead, it should integrate these resources into a unified ecosystem combining scholarly expertise, education, multimedia communication, virtual and augmented reality, artificial intelligence, and active community participation. Such an approach would transform the digital space from a passive **repository of national heritage into a dynamic cultural environment** in which younger generations can discover, understand, study, experience, and ultimately continue the cultural traditions of their predecessors. In this sense, digitalization should not be regarded as a replacement for living cultural traditions. Rather, it should serve as a bridge between **heritage and innovation, memory and technology, older generations and younger generations, local communities and global audiences**

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