



# The Role of Modern Information Technologies in the Study of Historical and Cultural Monuments Ichan Kala

*Tajiyeva Umida, Allanazarov Sirojbek*  
*Urgench State University, Urgench. Uzbekistan*

**Abstract:** This article discusses the application of modern digital technologies in the study of historical monuments "Ichan Kala" in Khiva and its practical significance.

**Key words:** technology, digital history, cultural heritage, museum, science and technology, reconstruction

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## INTRODUCTION

At the new stage of development in the Republic of Uzbekistan, comprehensive measures are being taken to further enhance spiritual and educational work, preserve historical and cultural heritage sites and study them in depth using modern information technologies. All this is done in order to pass on to future generations the invaluable heritage of our ancestors, to educate the younger generation as highly cultured and enlightened people.

In this regard, the Address of the President of the Republic of Uzbekistan to the Oliy Majlis states: "As the wise men of the East say, 'The greatest wealth is intelligence and knowledge, the greatest heritage is good upbringing, the greatest poverty is ignorance!' Therefore, it is necessary for all of us to acquire modern knowledge, to have a real enlightenment and high culture, to become a continuous vital need."<sup>1</sup>

Today, information technology is one of the most important factors influencing the development of our society. Information technology also exists at different stages of human development, and a distinctive feature of today's information society is that information technology is taking the lead among all existing technologies, especially new technologies.<sup>2</sup>

The "Concept of further development of national culture in the Republic of Uzbekistan" was approved by the Decree of the President of the Republic of Uzbekistan dated November 28, 2018 No PR-4038. The use of effective management and marketing methods in the management of museums, further strengthening the material and technical base of museums in accordance with modern requirements, the introduction of modern information technology in them.<sup>3</sup>

<sup>1</sup> Mirziyoev Sh.M. Address of the President of the Republic of Uzbekistan to the Oliy Majlis. // Khalq Sozi, January 25, 2020. №19 (7490). P.-2.

<sup>2</sup> "The role of young people with intellectual potential in education, science and industry" Samarkand: 2015. P.-222.

<sup>3</sup> Decree of the President of the Republic of Uzbekistan on approval of the concept of further development of national culture in the Republic of Uzbekistan. November 28, 2018, No. PR-4038.//www.lex.uz

Today, the issue of regular replenishment of museum funds with cultural treasures through the restoration and conservation of museum objects and museum collections included in the national museum fund, as well as strengthening the study of museum objects and museum collections and publishing its results is facing science. is one of the most important tasks.

As a result, in-depth study and analysis of museums and historical monuments, the widespread introduction of modern information technology in research processes will play an important role. In our opinion, the organization of such processes in line with the times gives a good result in the study of historical and cultural heritage, ensuring its rapid and easy delivery to the general public. In a word, it increases the results and efficiency of the research.

In today's era of increasing digitalization, the rapid introduction of information technology in all areas, the use of modern technologies contributes to the development of the industry and the expansion of its sphere of influence. At the same time, the development of modern information technologies is leading to further acceleration of integration in science and research. This will undoubtedly ensure the collection and storage of resources and information, and the improvement of processes.

One of the most important tasks of today is to objectively study and pass on to the younger generation the history of Khiva and its historical monuments, which are famous all over the world for their rich past, unique culture, immortal values and architectural monuments.

## **MATERIALS AND DISCUSSION**

There are many folk legends about the origin of Khiva and its name. One of them ascribes the foundation of the city to the son of the biblical Noah - Shem, where it is said that after the Flood, Shem, who once wandered in the desert, fell asleep, and saw 300 burning torches in a dream. Waking up, delighted with this omen, he founded a city with the outlines of a ship, according to the location of the torches he dreamed of. Then Sim dug the Kheivak well, the water from which tasted amazing. In Ichan Kala, this well can be seen even today.

After the formation at the beginning of the XVI century. Khiva Khanate Khiva became its capital. The appearance of modern Khiva is formed mainly by the architecture of the period of the Khiva Khanate of the late 17th - early 20th centuries. However, archaeological excavations carried out here show that at the base of a number of relatively "young" remains of buildings lie ancient layers dating back to the 3rd century. and even earlier centuries BC. Among the unique values of world importance are the architectural monuments of Khiva, which rightfully earned the epithet "city-museum".

The traditions of urban planning have been associated with the vast natural knowledge in the Khorezm region since ancient times and their application in practice. After all, the construction of strong structures in the complex natural conditions of Khorezm required work taking into account many factors. The proximity of groundwater, the sandy nature of the soil, the sharp continentality of the climate have placed special demands on construction technology in this region. Therefore, in the construction of city complexes, the construction of some of the structures in them necessitated certain engineering calculations.

Ichan Kala, located in Khiva, is the only surviving city-monument in Central Asia, the fate of which in the past, its architectural monuments are closely linked with the historical and cultural development of the world's oldest cultural oasis - Khorezm. Ichan Kala was declared a museum-reserve in 1967, and by a special decision of the 14th session of UNESCO held in Canada on December 12, 1990, it was the first in Central Asia to be registered as a World Heritage Site. historical architectural monuments are being erected.

The image of modern Khiva embodies the achievements of Khorezm architecture in the late Middle Ages.<sup>4</sup> Ichan Kala is surrounded by a 650X400m wall that stretches from south to north. The city area is divided into four by two streets. There are four gates facing the four directions (Stone Gate, Father Gate, Polvon Gate and Garden Gate). At the beginning of the 20th century, Khiva Ichan Kala had two palaces, 17 mosques, 22 madrasas, a caravanserai, and 260 shops between the Garden and the Gates. In 1922, Khiva had 64 madrasas (12 in ruins) and 84 mosques (34 in Ichan Kala), said Danilevsky, the Russian ambassador.

The construction of madrasas in the Khiva khanate flourished in the 19th and early 20th centuries. Sources state that "in the late 19th and early 20th centuries, there were 120 madrasas in the khanate."<sup>5</sup> There are currently 64 madrasas in Khiva. Madrasahs occupy the main place in the buildings of Ichan Kala after the settlements. "While deep summer arches have been built in the courtyards of Samarkand and Bukhara madrasas, Khiva madrasas have not built such open front classrooms. This is due to geographical conditions, and in the summer the open terrace could not be used as a classroom."<sup>6</sup>

"Based on the information stored in the archives of Khiva khans, a list of mosques around Khiva is given. These data show that the construction of mosques in the Khiva khanate developed in the XVI-early XX centuries.

It should be noted that today's period has completely changed the public consciousness's attitude towards the world cultural heritage. In this regard, the role of the media, which provides up-to-date information about events and happenings in all countries of the world, world-famous resorts, natural wonders and objects of cultural heritage, is invaluable. This situation is increasing the interest of tourists to explore the culture and lifestyle of many countries.

That is why today world tourism has become an important link in society as a leading sector of the economy and in raising the spiritual and cultural level of people. The rapid development of information technology imposes even more pressing tasks on cultural and educational institutions. Areas that are less connected with technology, including museums, libraries, archives, literature and art, are also combining their activities with modern technologies.<sup>7</sup>

In particular, modern techniques and technologies are rapidly developing in the study of historical and cultural heritage sites in the Ichan Kala museum reserve. In this process, special attention is paid to the preservation of material and cultural heritage, their scientific description, the organization of new museums, modern expositions and exhibitions that embody our ancient history. In recent years, the creation of a 3D photo of Ichan Kala, the placement of information about historical monuments on popular electronic maps such as Google, the creation of programs with comprehensive information about cultural heritage for foreign and domestic tourists, the organization of Wi-Fi in the region, " Extensive work has been done on the installation of fiber-optic networks based on placement in Google Earth.

The 3D views of 100 unique museum objects stored in the fund of the Ichan Kala State Museum-Reserve in Khiva have been digitized qualitatively, and now it is possible to visit the museum remotely from any corner of the world and see the visual views of the exhibits. This will increase the interest of foreign tourists and locals, especially young people, in the Ichan Kala State Museum-Reserve in the age of science and technology, and will allow virtual travelers to visit museums later.

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<sup>4</sup> Khiva. Compilers: Zohidov P.Sh., Avanesov R.H. - T., 1994. P.-36.

<sup>5</sup> Jomboqiev X., Khasanov S. Khorezm is the hearth of ancient culture. - T.: Science, 1983. P.-64.

<sup>6</sup> Ahmedov M Q. Central Asian architecture. - T., 1995. P.-76.

<sup>7</sup> Ismoilova J. Modern principles of cultural heritage promotion // Infolib, №4, 2018.

This, in turn, will increase the attractiveness of the museum, the quality of propaganda, and will be a big step in the marketing of the museum.

Resolution of the Cabinet of Ministers of the Republic of Uzbekistan dated March 3, 2021 No 119 "On measures to strengthen the protection of tangible cultural heritage sites and areas included in the UNESCO World Heritage List" sets the task of reconstruction of 3D models of tangible cultural heritage and creating a digital database. Currently, the Ichan Kala State Museum-Reserve is working to implement this decision.

In May 2019, the Uzbek delegation presented smart museum technology and the NazzAR system at the XXI International Festival "Intermuseum-2019" in Moscow. The delegation together with the Embassy of the Republic of Uzbekistan in the Russian Federation organized a national stand dedicated to the Ichan Kala State Museum-Reserve. The unique feature of the stand is that the visitors of the exhibition were able to take independent excursions around the reserve thanks to the smart-museum technology introduced in 2018.<sup>8</sup> With the NazzAR mobile app, visitors could take a tour of virtual attractions, relive historical events, and "resurrect" the famous ancestors depicted in the pictures. This news aroused great interest among guests and festival participants. Today, this opportunity is available at [www.khiva360.nazzar.uz](http://www.khiva360.nazzar.uz).<sup>9</sup>

As part of the research project "Creation of smart technologies based on the study of history, cultural heritage, monuments and works of art of Khorezm" in 2019-2021, more than 30 archeological, more than 150 architectural structures, 8 developed arts and crafts in Khorezm region. data on epigraphic materials in the museum reserve "Ichan Kala" were collected, processed and scientifically analyzed. On this basis, the site [www.historykhorezm.uz](http://www.historykhorezm.uz) created an electronic video infographic space for the history of cities, cultural heritage, monuments and works of art. An infographic list of cultural heritage, monuments and works of art of Khorezm cities has been compiled.<sup>10</sup> The research aims to bring the cities of Khorezm, its material cultural heritage, monuments and works of art to the public, including the younger generation and tourists, on the basis of smart technologies.

## CONCLUSION

Throughout the history that has flowed from the acquisition of Khiva the status of a capital city up to the overthrow of the khanate, Khiva has been characterized as a center that has absorbed traditional urban planning and city life. And in this city, since the beginning of the 19th century, historical events and changes have also taken place. As a result, new relations, types of crafts began to enter the existing traditional socio-economic and cultural life of the city, advanced ideas, individual elements of European culture began to take place in the life of the city. In particular, it was in this city for the first time in Central Asia that the foundations of musical notation were laid, cinema, photographic art appeared, and a book was printed in a lithographic way. Khiva today is considered one of the significant components of the rich historical and cultural heritage of Uzbekistan.

The introduction of modern information technologies in the study of historical monuments located in Khiva Ichan Kala serves to improve the tourist infrastructure of the region and increase the flow of foreign tourists. In addition, the use of modern information technology in the study of

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<sup>8</sup> The guests of the Moscow festival walked around the virtual Ichan Kala. 05/31/2019 // [www.uz.sputniknews.ru](http://www.uz.sputniknews.ru)

<sup>9</sup> [www.khiva360.nazzar.uz](http://www.khiva360.nazzar.uz)

<sup>10</sup> The final report on the research work of the innovation project "Creation of smart technologies based on the study of the history, cultural heritage, monuments and works of art of Khorezm" in 2019-2021. Khiva, 2021. P.-4.

monuments serves to further enrich the historical data and bring it to the attention of the general public.

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