Assisting Museums with Digital Technology in Response to COVID-19

Suboohi Nasrin

Department of Museology, Aligarh Muslim University Aligarh, 202002
subuhin22[at]gmail.com

Abstract: *In the year 2019, Coronavirus disease (COVID-19) hit every sector of life, showed a very uncertain future for museum, library and gallery institutions. As the pandemic hit our society, we stayed at home and turned to digital technology for communication. In this paper, we investigate how museums operate during COVID, what practices they use, and what challenges museums face. Also included is information on the advantages and disadvantages of digital technology. Based on our research, we discovered that digital technology plays an important role in the smooth operation of museums during COVID time. This digital technology played a significant role in audience communication for education, enjoyment and research.*

Keywords: COVID-19, Museum, Digitization, Technology and Education

1. Introduction

Coronavirus, often referred to as COVID-19, has had an impact on every aspect of human life. People are confined to their homes during this pandemic, and access to historical sites, museums, and other places of culture is restricted. This sudden isolation has forced museums to rethink their approach, address relevant issues and develop new directions that rely more on virtual than physical contacts. This demonstrated a significant shift in favour of digital technologies over onsite activities. Over the past year, digital technologies have been employed as a catalyst for learning in museums, both in person and online through well-known websites and digital interactive. Online visitors to various museums increased in 2020 compared to in-person visits. Using these digital tools presented a variety of difficulties for museum curators and educators, one of which is whether they are beneficial.

The corona virus had an adverse effect on every sphere of society in 2019, including museums. This epoch gave rise to fresh opportunities for interacting with digital cultural content. An online discussion to explore digital technologies in all kinds of museums was arranged by one platform for policy learning on June 18. These technologies encourage the creativity in museums and also connect digitally. Successful digitization necessitates developing skills in using digital tools to create digital content, making the museum collection online accessible, and improving the efficiency of museums. Members of the European Heritage Alliance launched a "Europe de Manifesto Cultural Heritage" on May 9, 2020 on the theme Digitally Transforming Europe, a powerful catalyst for Europe's future. Europe plays a very significant role in digital cultural heritage and also has new technologies such as artificial intelligence and machine learning based on humanistic and ethical principles. They were also working together to accelerate and improve digital technologies.

According to ICOM, a museum is a place of cultural and natural heritage. It is a non-profit, permanent institution in the service of society and its development, open to the public, that acquires, conserves, researches, communicates and exhibits the tangible and intangible heritage of humanity and its environment for the purposes of education, study and enjoyment (ICOM, 2012). In the digital age, the digitization of these heritage places is crucial. At the time of COVID-19, maintaining these historical artefacts is the most crucial role of a museum and is essential to its efficient online operation. To protect it from numerous disasters like floods, fires, earthquakes, tsunamis, natural ageing, and many more deteriorating elements, digital technologies with several storage materials, such as multiple storage systems, offsite storage, cloud storage, and so forth, are a must. The modernization and use of all kinds of technical breakthroughs in museums depends heavily on digitization.

The museum began to used computers in administrative and collection management strategies (1). With secure federal government funding and holing, the museum community began to learn about the effects of computer technologies (2). These technological advancements enabled scholarly exploration, interpretation and communication with a global audience via the internet. The ability of collection managers, curators, and administrators to efficiently organize and document their work for global knowledge and cultural transmission has been greatly influenced by the appropriate computer technology and software in museums (3). In this case, digital technology provided numerous options through the internet in museums. Public participation and partnerships between culture and education are encouraged, and through the use of multimedia technologies, these innovations can engage the public in critical thinking about the museum institution. One person can communicate with someone who is millions of miles distant through the use of all these digital technologies (information and telecommunication).

Digitization serve in many ways not only in reduces difficulties in accessing information but also save time of people. During a pandemic, the education sector makes use of digital resources such as the internet, extranet, online instruction, and virtual libraries to provide a basic education. However, due to a lack of resources and illiteracy, some communities are still not fully utilizing digitalization and multimedia technologies. Digital literacy is becoming

increasingly important among both educated people and the general population due to its growing importance. According to a United Nations research study, natural disasters are not new, but they are occurring three times more frequently than they did fifty years ago. Numerous agents of deterioration and degradation, such as physical, chemical, and biological factors can harm the millions or trillions of objects house in museums Other physical agents that cause damage include temperature, humidity, dirt, dust, pollution of the atmosphere, and natural ageing. Microorganisms, fungi, insects, and rodents are important biological agents of bio-deterioration that can be preserved through digitization. Digitization serves the dual purposes of facilitating easy public access and preserving cultural heritage. The museum artifacts must be preserved in both traditional and digital formats. Our lives have been completely transformed by computer and digital technology, which is expanding quickly. There was plenty of equipment and software available to digitize manuscripts, books, photographs, artifacts images and a variety of other priceless archival materials. We had the opportunity to test digital technologies during the COVID-19 lockdown, when everyone stayed at home and did not go anywhere.

In this challenging situation, various tasks were done via online media and the internet. The digitized materials were extremely beneficial and were made available to students who needed them right away to study for tests. Here, a variety of activities carried out by museums during COVID-19 are discussed.

User Engagement
The COVID-19 has impacted every aspect of our society, but museums have been particularly hard hit. All the countries have been severely affected by this virus; in fact, we can say that we are all in the same situation. To protect both visitors and workers from the corona virus sickness, several museums, science centers, schools and public places have implemented precautionary measures. Sometimes they have been forced temporary to close their institutions due to the order of government. For everyone, that time was extremely difficult. Nearly 90% of museums close their doors during COVID-19, according to a UNESCO research, which shows that this crisis has a specific impact on museums.

The survey report for 2021 indicates a 77% reduction in visitors to the top 100 art museums in the world. For sterilization purposes, the majority of museums and other spaces were closed to the general public. On March 14, some museums in Delhi, including the Kiran Nadar Museum, and all sites and museums covered by the Archaeological Survey of India, including the Taj Mahal in Agra, were ordered to be closed by Minister of Culture and Tourism Shripad Naik. In the Pandemic lockdown situation, 41% of the creative industry closed their doors to the public, 53% of the events and entertainment management sector cancelled deals, and 90% of corporate transactions were postponed between March and July 2020.

It is difficult for museum organizations to communicate with people during this pandemic. In cultural heritage museums, the use of AR and VR to improve visitor experiences has been studied (4). Many museums participate in this online platform to educate students and share their experiences. During the pandemic scenario, many scientists including Samaroudi, Echayarria, and Perry investigated the digital prospects of memory institutions in the U. K. and U. S. Using digital technology to increase knowledge and experience is a cutting-edge challenge for museum management (5, 6). This is crucial for the growth of experience and knowledge in museums (7). Digital media is being accelerated by this epidemic circumstance. According to the annual review report for 2020, "virtual museum tours" were one of the most recent searches over the previous twelve years. The Natural History Museums of Los Angeles offer a variety of online programmes, including interactive presentations delivered via the video conferencing platform Zoom.

With the help of museum professionals, the schools set up virtual field trips where kids could view exhibits and ask questions. The Riga Motor Museum in Latvia employs a variety of digital technologies that allow visitors to thoroughly explore the collection through audio tours, augmented reality experiences, video mapping shows, visual projections, multimedia solutions, audio experiences, hands-on activities, and games.

2. Conclusion

The COVID-19 pandemic crisis demonstrates a decline in museum visits and harm to the entire museum sector. The museum must adapt and use a variety of techniques to get over the challenges presented by the pandemic and unforeseen threats. Recently, it was discovered that museums use a variety of avenues for communication. By doing this, it gives museums a fresh appearance. The internet is used extensively in museums to run digital equipment. The computerized museum gave a fresh look, communicated with people, and educated them in order to combat the pandemic's issues. Both the advantages and disadvantages of digital technology are evident. On the one hand, it demonstrates benefits for educating our culture and serves as a channel for interpersonal contact. However, it also demonstrates that there are numerous obstacles to installing modern communications technologies because of a lack of resources and unawareness.

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