

# Digitization of Cultural Heritage: Global Initiatives, Opportunities and Challenges

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## ABSTRACT

The potential of digital technologies in safeguarding and preserving valuable assets have been established over time, predominantly in preserving our increasingly threatened heritage. Technological advancements in digitization and preservation aspects in the form of more sophisticated digitization gadgets have resulted in the practical implications of many digital preservation initiatives. The article discusses the concept of cultural heritage and need of digital preservation for managing and distributing cultural heritage collections through cooperative endeavors. It highlights the importance of incorporating technological advancements for managing effective and long-term cultural preservation projects. It points out various challenges concerning digital preservation initiatives for cultural heritage including financial, technical, policy guidelines, legal aspects and metadata concerns. The article further discusses some important digital preservation projects for managing Cultural Heritage and lists detailed features under each initiative for addressing various challenges.

## KEYWORDS

Cultural Heritage-Digitization, Digital Heritage, Digital Preservation, Digitization Initiatives, Heritage Preservation, Preservation-Initiatives

## INTRODUCTION

The International Council on Monuments and Sites (ICOMOS, 2002, p. 21) defines ‘Cultural Heritage’ as “an expression of the ways of living developed by a community and passed on from generation to generation, including customs, practices, places, objects, artistic expression and values and is often expressed as either Intangible or Tangible Cultural Heritage”. It signifies the aesthetic, historical, social, spiritual or other special characteristics and values a place, an object or a custom may have for present and future generations. Hence ‘Cultural Heritage’ is a resource for economic, social and culturally sustainable development through the inter-institutional and multi sector cooperation. Its communication and promotion will demonstrate the real socio-cultural and economic values of cultural heritage (Ministry of Culture, Government Republic of Kosovo, 2015). The term ‘Cultural Heritage’ has changed content considerably in recent decades and does not end at monuments and collections of objects. It also incorporates traditions or living expressions inherited from ancestors and passed on to future generations and mainly includes oral traditions, performing arts, social practices, rituals,

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festive events, knowledge and practices concerning nature and the universe or the knowledge and skills to produce traditional crafts (UNESCO, n.d.). From the historical perspective 'Cultural Heritage' constitutes the memory of the living culture of the people but the concept expanded drastically and incorporated both tangible as well as intangible cultural traits. Coordinated efforts and experiences in the form of initiatives and projects are gaining momentum towards digitization of cultural heritage. Digitization facilitates the preservation of original heritage item in optimal circumstances and also provides a digital equivalent available for use by the public at large (Stefanovski, 2003). Advances in digital technologies has facilitated viewing and studying of heritage artifacts as a whole with minutest details by way of incorporating zooming technologies at every level (Ott & Pozzi, 2011). According to Owens (2013), the most important reason for putting 'Cultural Heritage' online is to enhance accessibility so as to provide provisions for students, teachers and researchers to explore and connect with our past. This in turn will help cultural archivists to measure their success by analyzing how people use, reuse, explore, and understand these objects.

The present global scenario of chaos resulting due to an unending spell of wars, lawlessness, terrorism etc. has greatly affected and vanished some unparalleled historical treasures of the human civilization as in Iraq, Syria, Afghanistan etc. and no measures can facilitate to recreate the same. Therefore, in addition to preservation of physical cultural heritage timely steps need to be taken for preserving, managing and distributing information pertaining to rich cultural assets of historical value. According to IFLA (2017) it is essential to monitor areas at risk, to advocate for and raise awareness about conflict and disaster prevention. There are many threats to the survival of cultural heritage including war and occupation, the illicit traffic of cultural objects. Therefore, IFLA is working together with UNESCO and the International Committee of the Blue Shield to prevent this from happening and ensure that cultural heritage remains in safe conditions in their place of origin. It also sets out to monitor disaster areas around the globe and help with preservation as well as reconstruction once disasters (natural and man-made) have happened. Digitization thus provides cultural institutions ample opportunities to innovate novel and modern ways for preserving and managing cultural resource collections like using Digital Fabrication Technology for redrafting the threads in redesigning an item or event.

According to American Library Association (ALA, 2017) "Digital preservation combines policies, strategies and actions to ensure access to reformatted and born digital content regardless of the challenges of media failure and technological change. The goal of digital preservation is the accurate rendering of authenticated content over time". Rosner, Rocchetti and Marfia (2014) have highlighted the role of digitization techniques in supporting cultural preservation through creation of high resolution images and 3D Scans and thus facilitating restoration of specific artifacts and environments. The process of digitally reconstructing objects and landscapes from the past broadens access to cultural resources through remote distribution platforms, digitally representing and archiving cultural assets and media. The technology developments in digital preservation over time can be well understood by its off shoots like 'Digital Cultural Heritage' (DCH), digital fabrication technology and 'Digital Humanities' (DH). The Digital Cultural Heritage (DCH) sector is producing large volume of digital content in the form of digitized content generated through scanning or born-digital content e.g. databases, e-books etc. and associated information that needs to safely store and curate, make permanently accessible and re-usable. Therefore, each of them requires different approaches to digital preservation (Fresa, 2014).

Simultaneously, cultural heritage institutions in many countries are taking steps for creating national digital memories (Boamah, 2014) and are framing policies for addressing different issues concerning digital preservation and access patterns. Many organizations are suggesting cloud facilities, as is evident from the case of DuraCloud digital preservation system discussed by (Mannheimer and Cote, 2017) that provides cloud backup, regular monitoring and integrity checks of digital archival content and geographical distribution of digital preservation copies. These cloud-based solutions enable smaller cultural heritage institutions with limited resources to participate in digital collection

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