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# MUSEUMS PREPARING TO PRESERVE HERITAGE THROUGH DIGITIZATION

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## ABSTRACT

*The impact of digital tools on historical documentation. The pros and drawbacks of using digital technology to preserve cultural artefacts are weighed in this article. Unfortunately, the axiological significance of the term heritage is lost in the process of creating virtual cultural storages, which do not always allow for the preservation of an authentic representation of memory, history, and tradition in the same way an actual museum does. However, digital reenactments of cultural artefacts and online museums help to safeguard and preserve knowledge that might otherwise be lost. In this study, we examine the role that digitisation plays in museum efforts to conserve historical artefacts.*

**Key words:** digital technologies, cultural heritage, virtual reconstruction, communication, virtual museum

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## 1. INTRODUCTION

The scientific community has engaged in extensive discussion on the role that virtual technologies may play in the preservation of museums as repositories of historical and cultural artefacts. Experts from a variety of disciplines, including cultural studies, studies in museums, psychology, art history, and perceptual psychology, discuss the pros and downsides of using virtual approaches to preserve cultural heritage. The UNESCO General Conference passed a Charter for the Safeguarding of Digital Heritage in 2003. In the late 20th century, museums and galleries started to digitise their collections. Therefore, in addition to the physical exhibit, every major a museum now also features an online portal or virtual museum. Since mass culture as well as Internet-compilation of works of art blur the lines between genuine art as well as its

technological reproduction, it is important to analyse the content of a museum and gallery websites in the context of how people view novel objects. Therefore, there is a lack of genuine cultural communication. The term "digitization" refers to the process of making digital copies of anything that was originally analogue. Choice, assessment (which includes of needs), prioritisation, originals planning, digitization as well as creation of data collections, information collection and creation, submission of electronic materials to delivery systems and databases, and so on are all steps in the process. Management, including IP rights management as well as quality control, and assessment at the conclusion of this process are integral parts of it.

However, the task of the genuine sphere of life for humans (education and upbringing) and the formation of character and its spiritual needs are the same now as they were then. In many areas of human experience, the backdrop of tradition and legacy is crucial. However, the meaning of heritages shifts over time: "Gradually the idea of heritage includes an extensive variety of material objects, phenomena of nature, and insignificant forms of culture (such as, for example, information technological advances), reflecting various facets of the relationship between human beings and the environment, both regional and global developments in development, etc."<sup>2</sup> We can say that the pressure of the information flow causes the role of heritage cultures in the growing up and schooling of a modern man to vanish and fade into the background. Main approaches to archiving digital artefacts of cultural significance There are two main ways that experts see electronic technologies being used to preserve cultural heritage: a) e-form (electronic copies) of conventional cultural storage facilities (such as electronic libraries, museums, exhibits, databases, etc.) and b) electronic versions of traditional cultural storages.

b) New cultural items that exist in digital form (computer programmes, networks, technologies, electronic pieces of art, etc.) and which, depending on their preservation strategy, may join the ranks of intangible heritage.

There are distinguishing features of each kind listed below. On paper, though, they are quite comparable and even mutually supportive. Most academics agree that the interactive nature of digital archives represents a significant aesthetic breakthrough that is often lacking in traditional exhibition spaces like museums and galleries. One must look to another area of cutting-edge technology that is actively used in the upkeep of cultural heritage in order to analyse the electronic aspects of perception of reality in the field of interpretation and actualization. 3D reconstruction (or "virtual historical reconstruction in three dimensions"). Cultural and historical institutions understand the importance of their holdings. In the modern day, however, guardianship alone isn't enough to ensure the survival of these priceless artefacts; proactive digitization of collections is crucial to ensuring their continued existence. a need for preservation. The Roots Digitization has several benefits for museums, including better visitor experiences, easier access to collections, more research possibilities, and knowledge preservation in cases when real estate are at risk due to handling or need strict security measures.

The last two decades have seen a steady decline in the price of this method. Millions of hours of data input may be eliminated thanks to cheaper digital storage, more accessible picture capturing technologies, and built-in automation. The phrase "cultural heritage conservation"

refers to any and all efforts made to prolong the existence of cultural artefacts and ensure that its messages and values are kept alive for future generations. Its potential applications in areas such as image analysis, artificial intelligence, computer vision, or pattern recognition have garnered it a lot of attention in recent years. There are both material and immaterial elements to cultural heritage that need to be protected. Performing arts like music and dance make up a significant portion of intangible resources. The advent of the digital age has allowed for the preservation of knowledge via the digitalization of cultural artefacts.

Cultural heritage is the expressions of former ways of life that have been preserved for the present and future generations and were largely produced by humans. Languages, practises, traditions, values, locations, and artefacts are only a few examples of cultural heritage's various elements. Cultural expertise is being lost over time for many different causes. The preservation of archaeological sites and traditional artworks is inadequate, leading to their destruction and the loss of invaluable knowledge and skills. When interacting and communicating with others, it is essential to recognise and appreciate the significance of cultural differences. Instead than trying to modify them, we should celebrate the uniqueness that comes from the world's many cultures.

Both material and immaterial things contribute to our cultural legacy. Physical artefacts that are created, preserved, and passed down through the generations are what we mean when we talk about tangible cultural legacy. Traditional forms of dress, means of transportation, tools, structures, monuments, and works of art are all good examples. In contrast, intangible legacy consists of nonmaterial intellectual richness. Examples of intangible cultural heritage include languages, folk arts, local knowledge, and traditional skills. The proliferation of digital multimedia equipment and the widespread digitalization have aided preservation efforts, making it more likely that cultural artefacts will be accessible for the foreseeable future. Digitization, 2D, and 3D modelling methods are used to conserve physical cultural property, whereas a knowledge-based approach is better suitable when thinking about intangible cultural heritage. Language, art, music, and dance are more difficult to preserve. The background information and digital recordings of the performances are essential for the preservation of intangible cultural assets. The legacy of this living tradition is carried on from one generation to the next.

Many fields of study have emerged in response to the need to preserve cultural artefacts, such as

1. Preservation of Historic Structures,
2. Support for peer-to-peer referrals,
3. Regionalization of the Music Industry,
4. Identifying a Language
5. Methods for the Automation of Dance.

Heritage building conservation entails thinking forward about when and how to carry out maintenance tasks. The use of multiple linear regression is proposed as a means to foretell the architectural heritage's usability in (Prieto et al., 2017). Today, every country relies heavily on the tourism industry, and cultural tourism is the industry's primary source of revenue. Tourists have a hard time figuring out what exactly in the local culture piques their curiosity.

Hong et al.'s (2017) artwork-based cultural heritage recommendation system takes into account the user's context and social affinity gleaned from their experience as input (Li et al., 2019). uses a conditional random field model to suggest a regional categorization of Chinese folk tunes, and Dance Automat (Joshi and Chakrabarty, 2021) details the processes involved in automating the capture, interpretation, production, etc. of dance.

Creating virtual artefacts that provide data and media for studying the past at historic sites is an integral part of this kind of computer reconstruction. It seems that the development of electronic models for simulation is giving us a new instrumental approach to representing past processes or structures. Digital projections of this kind have a secondary effect on how we interpret cultural artefacts because they emphasise one particular "angle of view" story at the expense of accurate historical knowledge. Only viewers who are adequately prepared (with appropriate historical knowledge) or visitors with developed historical imagination would be able to appreciate these models. The visual conventionality of these replicas does not hinder the visitor's ability to understand the historical information being presented. As a result, the epistemological significance of the widespread use of computer simulators for the purpose of gathering scientific data has been lost. Imaginative aspects of 3D printing reconstructions Both presentation (tourist and leisure) reconstructions, which provide a consumer an approximation of the facilities, and research reconstruction, which solves multidisciplinary challenges in the field of cultural heritage preservation, are developing areas of focus for the discipline of 3D reconstruction. While they cannot take the place of the original monuments, their designers claim that they can help viewers feel more "immersed" in the monument's space by allowing them to get a better sense of its actual dimensions.

Reconstruction in the digital realm is evolving into a new artistic practise. "Electronic expositions in museums include a wide range of projects in which the use of information technology varies from the creation of devices, with the help of which a visitor receives information about museum items, to multimedia expositions, where the main role is already not played by the real thing, but a multimedia product, which itself becomes an exhibit." The underlying incompleteness of such effort, which hinders not just the act of perception but also the capacity to store knowledge, remains, nonetheless, a significant element of such endeavours. Instead of reconstructing the original structure, this process deconstructs the original monument and some of the information that has been recorded in reliable historical records.

The digital reconstructionists' refusal to acknowledge the digital age's fatal flaw—the end of authenticity—is telling. They develop proprietary database software to "gather" digital representations of artefacts that have been meticulously annotated with information about their design, construction, and provenance. Researchers are "blinded" by the visual appeal, potential of installation, animation, and three-dimensional changes of electronic devices for simulation

of genuine cultural heritage artefacts. People's attention is riveted on a stunning picture of a new virtual item of cultural heritage rather than on the possibility of further exploration of the monument via other means. All of the time-consuming work with sources, techniques of synthesis, and methods of attribution in the case of virtual reconstruction online is hidden "behind the scenes," and all the user sees is the finished product (the movie, image, or programme).

## **2. CHANGES DUE TO DIGITIZATION AND RELATED ETHICAL ISSUES**

Several ethical problems and disputes that arise from digitalization were identified in the literature reviewed. Some of these are examples of external influences that have prompted shifts in how memory institutions handle digitalization (for example, the rise of digital community archives). Due to the breadth of the subject, the overview and thoughts presented in this article can only scratch the surface of the ethical considerations surrounding digital technology. Amateur digitization and the formation of alternative quasi-professional digital archives kept by people and diverse groups were aided by the proliferation of low-cost, simple-to-learn digitization technologies made possible by the growth of Web 2.0. Indigenous communities, racial, religious, sexual orientation, and gender identity minorities, as well as post-colonial countries, have all used digital collections hosted online to reclaim a place in the spotlight and/or reclaim ownership of their cultural history. Archives, archives, and museums have portrayed these communities' histories from the perspective of more powerful cultures. Due to the state's inability to adequately provide for the preservation and dissemination of its citizens' historical records, a groundswell of "community archives" or "independent archives" emerged.

Digitization has been utilised by indigenous people to reclaim ownership of their culture's traditional knowledge that has been used for profit without their permission. Because songs, dances, rituals, and other forms of intangible cultural heritage are not safeguarded by current intellectual property systems, the World Intellectual Property Organisation, also known as WIPO, has advocated for indigenous communities to digitise these forms of cultural expression. The archival, library, and museum collections now include documentation of this kind of intangible cultural heritage as well. Traditional beliefs of indigenous people sometimes clash with the digitization, choice, and organisation of such works, as well as their widespread internet availability.

Archivists, librarians, and museum curators have gained a better understanding of the connection between cultural legacy and the worldviews of the cultures and communities who generate and practise it because to the rise of "community archives" and attempts to safeguard indigenous heritage. This posed serious problems for the common sense approach to cultural content management and distribution that prioritises impartiality and objectivity. Issues of inequity, subjective judgement, prejudice, etc., caused by the judgements of memory institutions, were brought to light by digital community archives. Memory institutions were originally created as organisations tasked with conveying the history of sovereign states, but they now find themselves embedded in the rich mosaic of memories and histories that make up the individuals and organisations that make up our society. Decisions made by institutions like archives, libraries, and museums are known to be heavily influenced by factors including

competing interests, power dynamics, and the political and legal climate. As perspectives on local history shifted, the following biases in digital preservation methods became readily apparent:

Due to the large price tag, most digitization efforts rely on grants and charitable contributions. Institutions are increasingly turning to commercial strategies as a means of funding digitization and ensuring the long-term viability of digital content archives. Such strategies revolve on the opportunity to create new products and services with the use of digitised cultural artefacts. Attempts by archives to monetize digital collections range from forming partnerships with businesses to finding funding from foundations. Memory institutions participate in these projects to achieve objectives like lowering the load of digitization expenses or gaining money, infrastructure, or expertise; their commercial partners participate to reuse digitised information in the supply of commercial services and products. Selection biases and access restrictions are two ethical concerns brought up by the adoption of a corporate mindset in the public sector. To begin, in public-private partnerships, sponsored givers and private sector partners have a say in whatever information is digitised and how it is interpreted.

According to the findings, specific choices and interpretations may be made based on the preferences of donors and partners. Pickover claims that the interpretation of digitised information in African initiatives is impacted by the funding sources from outside the continent.

The digitalization of cultural heritage raises privacy concerns owing to the remarkable ease with which personal information may be accessed, discovered, and combined across several internet platforms. Data regarding identifiable people may be found in a wide variety of sources, including medical records, newspaper articles, archived newspaper clippings, and field notes from anthropological studies. The negotiation of internet access with informants and contributors of cultural resources was often overlooked since it was not anticipated. The right to be forgotten adds a new layer of privacy in the digital environment, complicating efforts to find answers to ethical privacy challenges. In 2016, the General Data Protection Regulation of the European Union established the idea of "right to be forgotten." It gives users the option of removing or masking their online footprint, giving them more control over their personal data.

Importantly, case studies of digitization show that professionals working in memory institutions have become more aware of the potential harm that widespread online access can cause to individuals' lives. They've addressed digitalization programmes that need case-by-case reviews, carefully assessed the potential damage to individuals, and built information platforms with granular permissions. Care for the people whose identities are represented in historical records has also been shown in recent discussions of difficult issues involving digitisation.

It is still difficult to find and secure sensitive data during widespread digitalization projects. To strike a fair balance between the right to be forgotten and other rights, such as intellectual freedom, new rules, practises, and workflows must be established. Europe's digitalization programmes may face serious difficulties due to the lack of clarity around the implementation of the right to be forgotten. The digitization of historical sources may make them more accessible, but it also raises questions about how well they can stay true to their original intent. Researchers and practitioners are concerned with how data compression

techniques, post-conversion upgrades, and other factors affect users' ability to understand digital versions of historically significant content.

According to best practises for digital preservation, the master file you create should not include any changes made to improve the user experience. Most users, however, do not have access to the archival master file; thus, one of the appropriate solutions seems to be making publically available information about the the digitization policy of a historical institution and educating users (especially scholars) on authenticity problems in a digital environment. It is frequently neither practical nor cheap to strive for the utmost quality of digital conversion since the digital replica does not represent all the attributes of the original historical documents or items. Since the standards for the authenticity of digital content have not yet been defined, there are ethical concerns that have yet to be addressed.

The recipient communities' knowledge of ICTs, their ability to learn new skills, and their established routines of accessing digital resources are often overlooked. Digitization attempts for uprooted heritage are sometimes seen with scepticism because of concerns about their long-term viability. In the context of national policy and finances, memory institutions may not prioritise the digitization and upkeep of "foreign" cultural artefacts. As a result of a complicated web of circumstances including power, finances, infrastructure, literacy, and more, the impression that digital technology alone make universal access feasible is an illusion. The importance of memory institutions as global champions of digital access to heritage beyond national agendas and frameworks is highlighted in this context.

### 3. CONCLUSION

Except for the work of a few scientists, real information and real cultural artefacts are not required in everyday life. By the end of the 21st century, 3D digital reconstruction and digital simulations of full-scale monuments will be seen not merely as a viable alternative to the real thing, but as the only way to experience them at all. As a result, in the long run, we could remember cultural heritage things more from their digital representations than from their physical counterparts.

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