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# INCLUSIVE FUTURES

## Social Sustainability trends in Digital Cultural Heritage

Co-funded by the European Union

# TABLE OF CONTENTS


INTRODUCTION **3**
Michael Culture Association

DIGITAL INTERFACES FOR NEGOTIATION: CO-MANAGING HERITAGE IN THE AGE OF INCLUSION **6**
Sofie Taes, Fred Truyen, Zoë Vandenhende
KU Leuven DigitGLAM

CITIZEN SCIENCE AND DIGITAL CULTURE: WHEN CITIZENS BECOME PROTAGONISTS OF CULTURE **9**
Chiara Manghetti - Citizen Science Italia,
Cristina Da Milano - ECCOM

TOWARDS A COMMUNITY CULTURAL HERITAGE STACK **12**
Susanna Ånäs, Sophea Lerner – AvoinGLAM

MULTISENSORY INNOVATION FOR INCLUSIVE CULTURAL FUTURES **15**
Nasrine Olson- University of Borås

# INTRODUCTION

## MICHAEL CULTURE ASSOCIATION

Across Europe, cultural heritage institutions face a defining challenge: how to ensure that the digital transformation of heritage strengthens (and not weakens) our democratic, inclusive, and diverse societies. As more of our shared memory and heritage migrates into datafied, algorithmic, and online environments, questions of participation, representation and governance become central to the future of culture itself.

Talking about digitization: digital heritage and digital cultural content can either reproduce old biases or become spaces where communities rewrite narratives long marked by exclusion. The question of making visible the identities of those historically marginalised should be central when talking about digitized collections: where are the colonised communities, racialised groups, LGBTQ+ individuals, and others too often absent from European heritage canons? In a completely different chapter, those of us with disabilities continue to face barriers that prevent them from accessing or shaping cultural meaning, despite the promises of digital technology and the rights enshrined in international frameworks. And then again, young voices are sidelined and not recognized as active cultural agents, with very few participatory frameworks involving young people in governance of digital cultural heritage.

And yet, promising transformations and practices are emerging. Citizen science initiatives demonstrate how digital infrastructures can turn citizens into co-creators of heritage. Inclusive metadata tools challenge biased vocabularies and open pathways for community stewardship. Multisensory digital innovation shows that accessibility can unlock creativity, not constrain it.

Digital cultural heritage (DCH), when approached ethically with FAIR and CARE principles, can move us from a culture for people to a culture with people, everyone included, not as passive audience but as active agents capable of reshaping cultural spaces and civic participation.

One of the aims of the coming years is to place democracy, accessibility, and diversity at the heart of digital transformation. We want to understand how digitised heritage affects democracy and civic engagement, how it helps the development of critical thinking; we aim at informing and training professionals of what is already out there in the field of social sustainability, starting from the results of European R&I projects.

In this framework, comes "**Inclusive Futures - Social Sustainability Trends in Digital Cultural Heritage**".

We think it is important to showcase the initiatives active in Europe in the subject and give a space of reasoning to the people behind the scenes and connect the dots. By gathering insights from leading researchers, European projects, and practitioners, this publication highlights emerging trends in accessibility, diversity, and inclusion, use cases demonstrating how communities can co-create, co-manage, and reinterpret heritage, policy gaps and opportunities for stronger national and European action. Its purpose is simple yet essential: to make visible what already works, inspire replication, and support policy makers and professionals in building an inclusive digital cultural future.

This publication is the first step in an annual series that will follow TRANSFORM's journey as it cultivates a more socially sustainable digital heritage ecosystem. We invite institutions, researchers, policy makers, and cultural professionals to contribute, challenge, and collaborate.

We thank all the authors featured in this first volume of "Inclusive Futures": this publication would have not be possible without their insightful contribution.

*For partnerships or submissions for future editions: contact@michael-culture.eu.*

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# DIGITAL INTERFACES FOR NEGOTIATION

## Co-managing heritage in the age of inclusion

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*Heritage is immensely powerful yet deeply fragile: while it shapes identities, it is also vulnerable to exclusion, distortion and silence. Digital technology provides us with tools to preserve and share heritage at unprecedented scale but also to rethink how it is described, accessed and governed. This article reflects on the DE-BIAS project, which confronted harmful use of language in cultural heritage metadata by creating an inclusive vocabulary, an AI-supported tool and participatory co-creation workshops with communities often marginalised in heritage narratives. The experience illustrates how digital infrastructures can evolve into spaces of dialogue, where communities act not only as informants but as co-managers of cultural memory. From revisiting colonial-era photo archives with Congolese partners to testing multilingual vocabularies across Europe, DE-BIAS demonstrated how technologies, when co-designed, can open pathways towards more inclusive storytelling and more sustainable heritage practices. Beyond metadata, this contribution argues for a broader cultural shift: using digital citizen science, interactive fora and participatory preservation to safeguard heritage as a democratic commons. In a time of rapid technological change, social sustainability in the cultural sector will depend on our ability to design tools and policies that place communities at the heart of heritage governance.*

Heritage is never neutral. It is the æ fabric through which communities make sense of who they are, yet it is also shaped by histories of power that silence or distort some voices. In today's digital age, archives, museums and other cultural institutions face both a challenge and an opportunity: to preserve the traces of the past while ensuring they are presented in ways that foster participation, inclusivity and democratic values. The question is not only how to digitise heritage, but how to make these digital spaces socially sustainable? With a view to the envisaged longevity of social partnerships, cultural budgets under pressure throughout Europe, and the parallel need to optimise as well as to humanise operations, future-proofing has become an indispensable aspect of digital cultural heritage practices.

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Behind every catalogue entry, photograph caption or film synopsis lies a set of choices - often invisible but never innocent. Colonial perspectives, gender stereotypes and Eurocentric hierarchies have been encoded into heritage metadata and archival appraisal for decades, carrying bias into the digital. Communities whose lives and histories are represented are too often reduced to objects of description, rather than recognised as agents of memory. Social sustainability in the cultural sector requires turning this imbalance around.

The DE-BIAS project - completed in December 2024 but continuously receiving prompts and requests from sectoral stakeholders - offers one concrete response to this challenge. By creating a multilingual, inclusive vocabulary, developing an AI-supported tool and working directly with communities in co-creation workshops, the project provided both technical innovation and a participatory model. When Congolese partners, for example, revisited missionary photographs, they not only corrected biased descriptions but also added names, practices and meanings that had been absent. Such interventions reveal how digital tools can open a space for memory to be reshaped collectively rather than passively inherited, opening up avenues for epistemic justice.

What DE-BIAS demonstrates above all is that digital infrastructures can become more than databases or detection systems: they can serve as interfaces of negotiation. When communities are involved in shaping vocabularies, reviewing descriptions and deciding what stories are told (and how), heritage practice shifts from consultation to co-management. This requires careful participatory design to avoid reproducing power imbalances - such as who controls terminology or whose interpretations are deemed authoritative - but it also offers a pathway to more equitable heritage futures. In addition, it ensures that our increasingly interconnected information systems become part of the narrative and speak a shared language.

Beyond technical fixes

Looking ahead, the lessons learnt through the DE-BIAS project point to a much broader horizon than vocabulary and cataloguing. They raise the question of what it means to sustain heritage socially in a digital age. Social sustainability is not only about keeping resources available, but about ensuring that communities can recognise themselves, respond and (pro-)actively take part in shaping the narratives that emerge from archives and collections.

Digital technologies offer multiple avenues for this shift. Citizen science approaches (already familiar in natural sciences) can be applied to cultural heritage, inviting communities to annotate photographs, enrich metadata or share oral histories that expand the record beyond institutional knowledge. When designed inclusively, such platforms do more than crowdsource labour: they redistribute authority, recognising community members as co-researchers rather than external contributors.

Equally powerful are new storytelling formats. Digital exhibitions, immersive experiences or multi-vocal archives allow several interpretations to coexist, acknowledging that heritage is never one story but many. A Congolese community member may read a colonial photograph in ways that diverge radically from its missionary caption; presenting both perspectives side by side resists flattening difference and invites dialogue instead. These formats transform archives from repositories into arenas of conversation, where memory is continually reinterpreted.

Another area for futuring lies in digital restitution and reparation. While physical returns of objects remain contested and slow, digital infrastructures can begin to address inequities by giving communities access to and control over their dispersed heritage. This may involve co-curated digital collections, shared rights management, or even blockchain-enabled provenance records that acknowledge ownership and authorship. Digital restitution of course doesn't replace material debates but adds a vital layer of justice and recognition.

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CREDITS PHOTOS: VISUAL ARCHIVES FRANCISCANS, CC BY-NC-SA

**Considerate design as a prerequisite**

All of this depends, however, on the design of the interfaces of negotiation. If online fora replicate post-colonial dynamics - where expert voices dominate and community knowledge is tokenised - then technology risks reinforcing precisely the hierarchies it should dismantle. Co-design is therefore critical: communities must be involved from the start in shaping the language, structures and decision-making mechanisms of digital platforms. Only then can these spaces serve as genuine commons, where diverse knowledge traditions meet on equal terms. Participatory design should be grounded in an iterative methodology, allowing space for ongoing feedback, revision and reflection. In this way, we avoid extractive community engagement, instead allowing a continuous process of co-creation.

In this sense, social sustainability becomes less about safeguarding heritage as a static asset, and more about cultivating living, dialogical ecosystems. Ideally, digital interventions in inclusive heritage management should ensure that future generations inherit not only digitised records but also the tools and practices to question, reinterpret and reframe them. The DE-BIAS project is just one example, but it shows how modest technological interventions can open imaginative and ethical possibilities far beyond their initial scope. The task ahead is to carry these experiments into broader cultural policy, so that digital technologies are consistently harnessed for participation, diversity and democratic governance of heritage.

**Reframing heritage for the future**

The road to social sustainability in the cultural sector lies not in technology alone, but in how we choose to design and inhabit it. Digital infrastructures can be built as echo chambers of old hierarchies, or as interfaces of negotiation where heritage is constantly reinterpreted, contested and co-owned. The choice is ours.

The DE-BIAS project has shown that even small steps can spark profound shifts in how cultural memory is understood. But there's more potential that lies ahead of us: what would it mean to create platforms where communities hold equal curatorial rights with institutions? Could we imagine heritage "citizen assemblies", where decisions about access, description or restitution are debated collectively? Might archives one day function less like vaults and more like dynamic commons, where stories are constantly added, challenged and renegotiated?

To start answering at least some of these questions, bold experimentation is needed. Digital technologies give us tools for annotation, immersive storytelling, distributed authorship and participatory governance that the cultural heritage sector has only begun to explore. Its future task is not only to preserve what is fragile, but to make heritage a driver of social imagination: an arena where democratic principles are practised daily. To achieve that, we must continue to design technologies that question power, open space for multiple voices and embrace the unfinished, evolving nature of cultural memory. Social sustainability, in this light, is not a static goal but an ongoing commitment: to keep heritage alive, radically shared and respectfully contested.

# CITIZEN SCIENCE AND DIGITAL CULTURE: WHEN CITIZENS BECOME PROTAGONISTS OF CULTURE

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*Imagine being able to personally contribute to safeguarding our collective memory, turning a dusty archive into a living, accessible heritage for everyone. You don't need to be a scholar or a researcher – just curious, connected, and willing to participate. This is the essence of citizen science, an approach that originated in the natural sciences, where volunteers around the world collect data on birds, plants, or air quality. In recent years, however, citizen science has crossed disciplinary boundaries, entering the field of culture and heritage and transforming ordinary citizens into co-creators of knowledge. Through open digital platforms, anyone can help transcribe ancient manuscripts, catalogue historical photographs, or map sites of memory – making cultural heritage more accessible, inclusive, and sustainable. This article explores how citizen science, supported by digital tools, is becoming a powerful instrument for social sustainability, strengthening communities and civic engagement.*

**IFrom Science to Culture: A Surprising Journey**

For years, citizen science has allowed citizens to participate in scientific research. Amateur astronomers have classified galaxies; environmental enthusiasts and birdwatchers have tracked bird migrations. Just think that more than 50% of what we have discovered in the last years about climate changes was possible through citizen science. The principle is simple: knowledge is built together, in a horizontal and collaborative way.

But what happens when this model enters the cultural field?

The answer is surprising: people of all ages can now help transcribe historical manuscripts, catalogue forgotten photographs, or collect local stories. A striking example is the Smithsonian Transcription Center, which engages thousands of volunteers in digitizing and transcribing historical documents, travel diaries, botanical collections, and archival letters. Their contributions are reviewed by curators and historians, creating a

collaborative digital archive accessible to all.

This is not just about transcription or cataloguing - it's about entering into dialogue with the past and becoming active custodians and ambassadors of cultural heritage. Cultural citizen science makes research participatory and democratic, building bridges between citizens and institutions and turning heritage into a shared common good.

**Digital as the Engine of Participation**

Digital technology is the true enabler of this methodology. Open platforms and collaborative online tools allow anyone to participate, from anywhere and at any time. Projects such as Zooniverse or CitSci demonstrate how technology enables the digitization, transcription, and annotation of historical archives, photographs, and documents, creating an ecosystem of shared knowledge.

Through participatory mapping and digital annotation tools, communities can tell local stories, identify sites of cultural interest, and enrich existing archives. Technology thus becomes a tool for inclusion and empowerment: by breaking down geographical and social barriers, it allows people of all backgrounds and ages to contribute actively to culture, transforming every citizen into a protagonist of shared knowledge.

**Social Benefits: More Than Just a Contribution**

Participating in a cultural citizen science project is not merely an act of volunteering - it's an experience that generates tangible social impact.

It promotes inclusion and accessibility: anyone with an internet connection can take part, regardless of background or education.

It also strengthens civic responsibility: contributing to the transcription of a document or mapping a site of memory fosters a sense of belonging to a larger project, deepening one's connection to both community and cultural heritage.

Moreover, it develops digital and research skills, turning every participant into a guardian of collective memory - able to read, analyze, and enhance cultural content.

It also values diversity and cultural pluralism, allowing people from different backgrounds to share stories, perspectives, and knowledge, enriching our collective understanding of culture.

Most importantly, in an era of growing distrust toward culture and science, citizen science helps rebuild trust between citizens, institutions, and the scientific and cultural sectors, showing that knowledge can be participatory, transparent, and open.

CREDITS PHOTOS: CITIZEN SCIENCE ITALIA ETS

**Good Practices and Policy Recommendations**

For citizen science to become a long-term strategy for social sustainability, institutions and policymakers must act strategically. A strong policy framework and targeted support are essential to embed participatory approaches into the cultural sector and make them sustainable over time.

Supporting open and accessible digital platforms is also crucial to facilitate participation and data sharing. A leading example is Zooniverse, one of the world's largest and most inclusive citizen science platforms. It hosts for free hundreds of projects across disciplines - from astronomy to history and cultural heritage - and allows anyone, anywhere, to contribute to real research.

Through its intuitive interface, accessibility features, and multilingual projects, Zooniverse demonstrates how open technology can democratize participation and make data collaboration possible at a global scale.

Integrating citizen science into educational programs can spark curiosity among young people and bring them closer to culture in interactive and engaging ways. It could also be introduced as a teaching methodology within schools, encouraging students to become active participants rather than passive learners, and helping them develop digital, critical, and collaborative skills through real-life cultural projects.

Projects must be inclusive, ensuring space for diversity in gender, ethnicity, and social background too. Inclusion also means embracing linguistic diversity: many citizen science platforms are now developing multilingual interfaces and encouraging contributions in minority and regional languages.

Clear ethical guidelines are also essential to protect participants and ensure data quality. These should include transparent consent procedures, respect for privacy and intellectual property, and mechanisms to validate contributions. Establishing ethical standards builds trust among participants and ensures that citizen-generated data can be responsibly reused by cultural institutions and researchers

Finally, fostering collaboration among cultural institutions, local communities, and research centers enhances both replicability and sustainability. Organizations such as Citizen Science Italia play a key role in this ecosystem: they act as a bridge between projects and public or private entities, disseminating results, offering mentorship, and promoting best practices among the scientific, cultural, and community sectors interested in adopting this participatory approach.

**Conclusion**

Citizen science – including its growing application in the cultural and heritage fields – demonstrates how culture, technology, and participation can come together to build stronger, more conscious, and more inclusive communities.

Through digital tools, everyone's contribution becomes part of a shared collective heritage, reinforcing civic responsibility and belonging. Participating in a citizen science initiative means joining a movement where knowledge creation is open and collaborative, bridging science, culture, and society.

Today, institutions and policymakers have the opportunity to sustain these practices by promoting an open, democratic, and participatory model in which technology becomes a lever for genuine social sustainability.

In this vision, every citizen becomes an active partner in knowledge and culture – transforming curiosity and passion into shared understanding and more connected communities.

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# TOWARDS A COMMUNITY CULTURAL HERITAGE STACK

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CREDITS PHOTOS: WIKIMEDIA, CREATIVE COMMONS ATTRIBUTION-SHARE ALIKE 3.0

*AvoinGLAM is preparing **Oulu Löyly**, a 3-day think & do fest, which will take place in June 2026 in the context of the **Oulu European Capital of Culture.** The event brings together many of the experiences, insights and challenges we have encountered in our ongoing work to promote open access to cultural heritage.*

*The focus of the event is community heritage. By this, we mean heritage that usually falls outside the responsibility of traditional memory institutions, for example living heritage, family archives or community collections, and how these can be shared in meaningful ways as part of the global cultural commons. We are inviting a diverse group of participants, including community representatives, cultural organisations, technologists, legal experts, and open culture advocates, to collaborate in developing a clearer understanding of the challenges facing community based cultural collections, and to co-create solutions that make openness both feasible and respectful.*

Challenges of open sharing for small archives and community actors. We have seen that open sharing of cultural materials is a powerful way to preserve and revitalise culture. It increases appreciation, access and participation in community heritage. However, communities often face a range of challenges in gathering, preserving, digitising, interpreting and sharing their archival materials. Open sharing is not a one-size-fits-all solution, and this is the key issue we aim to explore and address.

**Difficult rights management and meaningful consent**

In many cases, community heritage cannot be opened up without considerable preparation because it may contain personal information or sensitive cultural materials subject to community rights that are not addressed by existing copyright rules. Communities require nuance, flexibility, and an awareness of the risks associated with oversharing.

CREDITS PHOTOS: WIKIMEDIA, CREATIVE COMMONS ATTRIBUTION-SHARE ALIKE 3.0

This is particularly relevant for indigenous heritage, where traditional knowledge may be legally considered to satisfy the requirements of public domain, whilst community protocols, custodianship, and care practices that fall outside the scope of copyright law may in fact be more important to consider.
While personal data rights are protected by law, managing consent in online environments can be challenging for individuals or small organisations. Technological solutions that enable thoughtful rights management, while supporting sharing, are still lacking. Consequently, many projects end up having to choose between fully opening or fully closing their heritage collections.

**Skills, know-how, capacity**

Digital sharing of heritage requires a wide range of skills and knowledge. Community approaches to preserving, describing, and sharing materials often fall short of the established standards of memory institutions, which can be an additional barrier to their inclusion in collaborative projects and collections. Sharing also creates ongoing work: open materials need maintenance, contextualisation, and careful communication to remain meaningful and usable

**Heritage at risk**

Community heritage faces a wide range of risks. Fragile environments, from the polluted Baltic Sea to the melting Arctic, demonstrate how climate change can threaten both tangible and living heritage. Specific geographies highlight potential threats to communities from conflict, disaster, neglect and oppression. Digital obsolescence threatens heritage in digital environments, and emerging challenges, such as the unchecked re-use of heritage materials by AI systems, add another layer of complexity.

**Technology and platforms**

Effective digital sharing requires technology that communities don't have to build from scratch. Platforms need to be adaptable to changing legal requirements and resilient in the face of shifting support structures or the disappearance of service providers. This calls for interoperability, user-friendly tools, cloud services, and stable providers, among other things.

**Solving issues together**

These challenges are deeply embedded in global digital ecosystems, and to fully address them, one must engage these systems at multiple levels. For this reason, the scope of our event ranges from the local to the global in terms of the questions we ask and the answers we seek.

**The setup is part of the solution**

The invitation itself is a central part of what the event aims to achieve. We are bringing together people who share a passion for cultural knowledge and believe in the power of individuals and communities to make a difference. We welcome heritage communities, advocates for open systems, cultural practitioners, technologists, and policy makers to inspire one another during an intensive and friendly working period, and to co-create ideas that bring multiple and varied perspectives to the table.

**Collective care**

Social innovations can play a crucial role in safeguarding community heritage. For example, larger institutions can support smaller organisations by providing access to preservation systems, technical expertise, and training, allowing communities to benefit from resources they could not maintain on their own.

**Global policy**

We will explore how global advocacy efforts promoting equitable access to public domain cultural heritage and advocating for culture as a digital public good can support community heritage and guide policy and practice at local, national, and international levels.

**Technological solutions**

Rather than multiple small actors reinventing the wheel, it makes sense to build on existing technological systems, which shape the options available and provide stable and maintained infrastructure that individual communities alone could not sustain.
At Oulu Löyly, we will build upon the work of the global GLAM Wiki community that brings materials from cultural heritage collections to Wikimedia's multilingual projects: Wikidata for linked data, Wikimedia Commons for media files and Wikipedia. The ecosystem allows rich connections between items in collection across the globe, and hooks them up with a community of stakeholders.
As this ecosystem has inherent limits in scope and scale, we will explore ways to connect community collections through interoperable systems. One prominent platform for this is Wikibase – the software behind Wikidata – which can be configured to serve dedicated knowledge domains. Wikimedia Deutschland maintains a showcase page of projects using Wikibase. AvoinGLAM has coordinated the development of a collaborative blueprint for using Wikibase to manage media art collections.

Furthermore, we wish to examine how the Common European Data Space for Cultural Heritage can enable controlled knowledge exchange. On a general level, we will investigate federated architectures that allow small, independent units to interoperate with larger networks, preserving community control while fostering shared access to cultural knowledge.

**Survey**

In preparation for the event, AvoinGLAM ran a survey to anticipate the needs and opinions of the potential participants. The respondents identified a range of urgent issues, with political and economic challenges, gaps in institutional resources and skills, and the user experience of heritage systems taking precedence over technology-related concerns. Other highlighted issues spanned open access, resilience, trust, ethical representation, and community-based environmental awareness.
The digital cultural commons relies on open, interoperable, and resilient infrastructures. Given uneven digitisation capacity and the risks of centralised or governmental platforms, decentralised open-source solutions and international solidarity are essential to keeping cultural heritage visible, usable, and sustainable across borders.

**Community heritage stack**

To address the complex challenges of safeguarding community heritage online, we propose the concept of a community heritage stack; a layered combination of skills, relationships, tools, technologies, insights, and approaches. This provides a flexible framework for collaboration and policy development, offering participants a flexible model that they can test, adapt and apply within their own contexts. The stack can also inform recommendations for cultural policy, funding priorities and technical solutions, helping online heritage systems to reveal deeper layers of cultural knowledge that are accessible and beneficial to broader society, while supporting thriving communities.

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# MULTISENSORY INNOVATION FOR INCLUSIVE CULTURAL FUTURES

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*Despite widespread digital transformation in the cultural heritage sector, significant accessibility gaps persist. Many cultural experiences continue to be shaped by assumptions of sight, hearing, and neurotypical interaction, leaving individuals with sensory, cognitive, or physical disabilities excluded from meaningful participation in cultural life. Many cultural experiences remain inaccessible by design, lacking the multisensory interaction modes, including haptic, auditory, and tactile alternatives, needed to support diverse ways of perceiving and engaging. As a result, people with disabilities (e.g., those living with deafblindness), are often excluded when content is not presented in forms that accommodate a wider range of sensory and cognitive needs.*

*This exclusion is not only a question of access, but also of agency and representation. When people with disabilities are unable to engage with or shape cultural content, the result is a narrowing of cultural meaning, experience, and ownership. And yet, inclusive cultural access is a right enshrined in the UN Convention on the Rights of Persons with Disabilities. The challenge lies in turning this right into practice.*


CREDITS PHOTOS: MUSEIT PROJECT

**The Solution: MuseIT's Inclusive, Multisensory Response**

MuseIT - Multi-sensory, User-centred, Shared cultural Experiences through Interactive Technologies (2022–2025) is a Horizon Europe-funded project that set out to address this challenge through a combination of technological innovation, participatory design, and inclusive research. Coordinated by the University of Borås in Sweden, the consortium brings together around 70 researchers, developers, artists, and cultural professionals from 12 partner organisations across 9 countries. The project's two main target groups are cultural institutions and people living with disabilities. However, it has actively involved a wide range of stakeholders, including policymakers, scholars, disability organisations, advocacy groups, artists, and the general public.

At its core, MuseIT embraces a co-design methodology involving a spectrum of user-involvement from ideation to development and testing. Towards this, more than 60 engagement activities were conducted to ensure that the solutions developed responded to the actual needs, preferences, and creative potential of those who would use them. These included workshops, fieldwork, and two large-scale pilot events.

- Pilot 1, held in Rome, involved nearly 100 attendees, who engaged with a wide range of MuseIT technologies, including the MuseMeUp platform (emotion-driven music generation), the MuseIT Virtual Museum (XR environment with EEG-based affective computing), the HaptiVerse system (haptic communication for the deafblind), and MuseIT Web User Interface. Feedback was gathered through direct testing as well as pre- and post-test focus groups discussions.
- Pilot 2, hosted in Borås, Sweden, focused on showcasing MuseIT's remote co-performance platform, where musicians in different physical locations performed synchronously with zero latency and shared expressive data in real-time. The platform proved technically robust and emotionally resonant, highlighting the creative potential of inclusive collaboration across distance.

In its final phase, the project culminated in a two-day symposium and exhibition presenting all of MuseIT's technologies in their refined forms. These installations also featured the results of nine months of co-design with artists and creative practitioners, focused on enriching cultural objects with alternative expressive layers.

Just as an example, in one installation, historical garments were transformed into multisensory experiences. Visitors were invited to touch the objects, triggering music or stories associated with specific points on the fabric. For potential contexts in which touching original artefacts is not allowed, a miniaturised, tactile replica was created using the exact same materials, layered as in the original clothing. These replicas included raised elements embroidered with triggers that activated storytelling and music, allowing visitors with visual impairments to engage with both the form and the narrative of the object.

Other examples include artworks enhanced with haptic feedback and original music composed by musicians interpreting the visual qualities of the paintings. These additions aimed not only to increase accessibility, but to expand the emotional and aesthetic dimensions of the cultural experience for everyone.

The Future: A Foundation for Inclusive Practice

One of MuseIT's core messages is that inclusion is not a technical feature to be added at the end, it rather must be designed from the start. The project demonstrates that accessibility can be built into all levels of cultural technology, from data structures and knowledge graphs to interaction design and storytelling.

MuseIT's outcomes are not isolated solutions, but elements of an evolving ecosystem. The modular nature of tools like the MuseMeUp, Co-performance Platform, HaptiVerse, Picture2Notes, or the MuseIT Virtual Museum allows them to be adapted or extended in different cultural contexts. The project's open repository and FAIR-compliant data workflows also support the re-use and remixing of digital cultural assets in multiple modalities (visual, auditory, tactile, haptic, and semantic), offering a model for future accessible content generation.

More broadly, the participatory methods developed, grounded in co-creation, mutual learning, and respect for lived experience, offer a replicable framework for inclusive innovation in digital heritage. They serve as an invitation for cultural professionals and technology developers alike to see accessibility not as a constraint, but as a source of creativity and relevance.

How Cultural Institutions and DCH Communities Can Get Involved

Cultural institutions, digital heritage professionals, and others in the GLAM sector are warmly encouraged to explore and build upon MuseIT's results. The tools, datasets, and methodologies are openly available via the project website and partner channels.

Ways to engage include:

- Exploring or integrating MuseIT tools in exhibitions, educational programmes, or experimental settings.
- Reusing the multimodal dataset and inclusive data workflows developed in the project for accessible content creation or AI-based enrichment.
- Adopting the participatory and co-design approaches used in MuseIT to create more inclusive experiences tailored to diverse users.
- Consulting the policy briefs and recommendations co-produced with experts and stakeholders to guide institutional strategies for inclusive digital transformation.
- Joining the network by contacting the project team, subscribing to the newsletter, or attending future events or workshops focused on inclusive cultural innovation.

**A More Inclusive Cultural Future**

MuseIT does not claim to have solved all the challenges of accessibility in cultural heritage, but it has shown what is possible when inclusion is treated as a starting point rather than a footnote. Through collaboration, creativity, and commitment, the project has helped re-imagine and prototype a cultural landscape where people of all abilities can participate fully and meaningfully.

As expressed by Klas Nelfelt, the President of the Swedish Association of the Deafblind (Förbundet Sveriges Dövblinda - FSDB): "MuseIT shows what a more inclusive cultural life could look like– where even people with deafblindness have the opportunity to experience art and culture on their own terms. It is crucial that research and technology are used to break down barriers, not build them. I hope the project's results serve as an eye-opener, encouraging others to prioritise accessibility from the very beginning."

CREDITS PHOTOS: MUSEIT PROJECT

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# Let's keep in touch

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