1 Aerarium Chain

MATRIX: DIGITAL TOOLS USED BY MUSEUMS

Italy

www.museofrancescogonzaga.it

METHOLOGY

AerariumChain leverages 3D scanning, blockchain, and NFTs to digitize, monitor, and fund the preservation of museum artworks. Key steps in the methodology include:
·3D Scanning & Ultraviolet Imaging (UVI): Create high-resolution digital replicas and detect hidden or degrading elements in physical artworks.
·AI-Powered Condition Monitoring: Analyze 3D scans over time to detect changes, enabling early conservation intervention.
·Blockchain Notarization: Secure digital assets by recording their authenticity and scan metadata on the blockchain.
·NFTMicro Strategy: Create large volumes of micro NFTs (digital tokens not tied to ownership rights) to fund conservation via digital art sales.
·Revenue Generation via NFT Sales: NFTs are sold online to "digital collectors", creating new funding streams without compromising physical ownership.
·Free Access for Underfunded Museums: Institutions can join the platform without upfront costs by committing to NFTMicro issuance and profit sharing.
This method is a scalable, digitally-driven model for sustainability that combines conservation, fundraising, and community engagement through tech innovation.

SKILLS & KNOWLEDGE REQUIRED FOR EFFECTIVE IMPLEMENTATION

·Budgeting and resource planning for digital initiatives
·Integration of digital tools into traditional workflows
·Strong risk management and project execution skills
·Building partnerships with tech experts and stakeholders
·Ability to leverage digital marketplaces for selling NFTs and reaching global audiences
·Basic skills in metaverse platforms to host virtual exhibitions and immersive experiences.

STRENGTHS & OPPORTUNITIES

·Low Start-Up Costs and Accessibility: Free 3D scanning services for underfunded institutions through the issuance of NFTMicro, ensuring inclusivity for small cultural organizations.
·Innovative Revenue Generation: NFTs create a sustainable funding model without selling ownership rights, ensuring cultural heritage remains intact.
·Advanced Preservation Capabilities: High-quality 3D scanning and AI algorithms enable detailed monitoring of artworks, detecting early signs of degradation and ensuring proactive conservation.
·External Factors: Collaborations with experts, cultural institutions (e.g., Museo Egizio), and funding entities enhance credibility. Furthermore, rising interest in NFTs, virtual exhibitions, and the metaverse aligns with the increasing popularity of digital assets and experiences among modern audiences.

WEAKNESSES & THREATS

·The potential of NFTs in the museum sector is significant but remains largely unexplored, along with the associated risks. A major challenge lies in verifying the legitimacy of the issuer—buyers need assurance that the seller is the rightful owner or has proper authorization. While blockchain ensures traceability of ownership changes, the complexity increases with physical works, raising critical questions about differentiating between the ownership of the physical artifact and the digital NFT. Additionally, some cultural organizations may be hesitant to embrace NFTs, blockchain, or the metaverse, perceiving them as complex or risky and target audiences, including some collectors and smaller institutions, may lack familiarity with NFTs or the technical requirements for accessing digital assets.

RESOURCES NEEDED AND START-UP COSTS

Core Resources:
·3D Scanning Hardware and UVI Devices - provided at no cost to qualifying museums.
·Blockchain and NFT infrastructure - managed by AerariumChain platform (no setup needed for participants).
·Digital Marketplace Access - via AerariumChain for NFTMicro sales.
·Basic IT Infrastructure (e.g., internet access, admin portal use).
·Partnership coordination - for NFT artwork curation and fundraising strategy.

Estimated Start-up Cost:
·€0-€500 for participating institutions (assuming the museum joins through AerariumChain's NFTMicro model).
·Optional costs for branding, content creation, or digital marketing: €500-€2,000 (scalable based on goals).

POSSIBLE LOW-COST SOLUTION

Smaller museums or local heritage sites can replicate or adapt key elements of the AerariumChain model on a limited budget:
·Partner with free or low-cost 3D scanning providers, such as university labs or innovation hubs.
·Use photogrammetry apps (e.g., Polycam, RealityCapture) for creating basic 3D models via smartphones - no special equipment needed.
·Mint NFTs on low-cost or eco-friendly platforms like Polygon or Tezos, using services like Objkt, Zora, or Rarible.
·Avoid full blockchain setup - instead, use existing NFT marketplaces with easy onboarding.
·Offer virtual tours of digitized artworks via Sketchfab, Mozilla Hubs, or social media.
·Combine with donation-based models rather than resale trading for simplified revenue flow.

Estimated Low-Cost Implementation:
·€100-€1,000, mostly for training, NFT minting, and digital promotion.
This makes it feasible for small institutions to explore the fundraising and preservation potential of digital assets without high technical barriers.

Co-funded by the European Union

2 Are you learning Icelandic?

Iceland

www.visitreykjavik.is/service/settlement-exhibition

METHOLOGY

This initiative uses guided tours tailored to Icelandic language learners to enhance accessibility, inclusivity, and community engagement. The approach focuses on:
·Cultural immersion through real-world language practice in a museum setting.
·Pre-visit vocabulary support, helping learners familiarize themselves with key terms (e.g., "torfhús") for a richer tour experience.
·Accessible communication: The guide uses simple Icelandic adapted to second-language speakers of various levels.
·Inclusive outreach: Events are promoted through immigrant-specific and general social media channels.
·Accessibility transparency: Advertising includes information on wheelchair access, lighting, and floor conditions—helping visitors with mobility or sensory concerns prepare confidently.
The initiative aligns with broader museum goals of lifelong learning, community integration, and inclusivity, while promoting practical language use in a cultural heritage context.

SKILLS & KNOWLEDGE REQUIRED FOR EFFECTIVE IMPLEMENTATION

·Knowledge of succesfully communicating/teaching history to language learners of varying abilities.
·Ability to write and produce simple but educacional tours about an important part of Icelandic history.
·Connections with and within immigrant communities to ensure initiative reaches target audience.

STRENGTHS & OPPORTUNITIES

·Simple initiative, low technological requirements.
·Very low cost. (Costs are limited to paying the guide and the loss of potential entrance fees as tour is provided free of charge which might attract frequently low-income immigrants).
·Can easily be replicated.

WEAKNESSES & THREATS

·Finding a guide with both Icelandic language learning experience and knowledge of the subject matter.
·Making sure target groups are aware of the event as they might not be familiar with museum social media etc.
·Event timing was on a Saturday afternoon. Although typically the majority of workers are free on weekends this may not have worked for some. Therefore, important to offer at varying times to maximize participation.

RESOURCES NEEDED AND START-UP COSTS

Core Resources:
·Qualified guide fluent in Icelandic as a Second Language and knowledgeable in cultural heritage - paid per tour or part-time.
·Tour planning and materials: Vocabulary list and a script using simplified language.
·Advertising through Facebook and immigrant community channels - minimal/no cost.
·Basic visitor accessibility info to be added to marketing materials.

Estimated Start-up Cost:
·€100–€300 per tour, primarily to cover guide compensation and optional printed handouts.
·Additional ongoing cost: potential foregone ticket revenue, as the tour is free of charge.

POSSIBLE LOW-COST SOLUTION

This initiative is already very low-cost and highly transferable. A small or local museum could implement a similar program with even fewer resources by:
·Using volunteers or interns (e.g., language learners or TEFL students) with adequate supervision.
·Offering pre-recorded audio or video tours using simplified language.
·Sharing downloadable vocabulary sheets through free tools like Google Docs.
·Partnering with local schools or language centers to co-promote recruit attendees.
·Repeating the same tour with minor adjustments, reducing prep time.

Estimated Low-Cost Implementation:
·€0–€100 per tour, depending on whether the guide is a volunteer and materials are digital-only.
This makes it an excellent model for small or underfunded museums looking to engage with immigrant communities or language learners without needing digital infrastructure or technical expertise.

Co-funded by the European Union

3 Audio Tour (Daily Life and Nature)

Iceland

www.husmus.is

METHOLOGY

This initiative enhances exhibition accessibility through a mobile-accessible, AI-narrated audio guide that connects visitors to stories about the interaction between people and nature in the late 19th and early 20th centuries. Key features of the methodology include:
·QR code-based access: Visitors scan a QR code at the exhibition entrance to access an online audio tour via their smartphones.
·Bilingual, AI-generated audio files: Clear narration in English improves access for international or visually impaired visitors.
·Text + audio hybrid format: Visitors can read or listen, depending on preference or accessibility needs.
·Local voices and stories: The use of contemporary personal accounts helps create emotional engagement and contextual understanding of the exhibits.
·Remote access: The exhibition content is hosted on the izi.travel platform, allowing access to the experience from anywhere in the world.

This approach makes the museum more inclusive, interactive, and engaging, especially for those who cannot read exhibit text due to language or visual barriers.

SKILLS & KNOWLEDGE REQUIRED FOR FEFECTIVE IMPLEMENTATION

·Translation of Icelandic text into English
·How to generate audio files using AI
Knowledge of Izi.Travel website (how to upload files/ photographs etc)

STRENGTHS & OPPORTUNITIES

·Very user friendly.
·Low cost- limited mostly to labour costs to write 'scripts', generate AI audio files and upload audio files and photographs to (free) IZI.travel website.
·Very accessible as most contemporary visitors own mobile phones.
·Initiative can be modified, updated and expanded easily. MMÞ is in the process of implementing this in additional permanent exhibits.
·Can also be easily expanded to include more languages

WEAKNESSES & THREATS

·Relies on stable wifi access as some visitors do not have mobile data when visiting from abroad.
·Izi.travel website has to be monitored regularly to ensure it is still fully operational
·Some older visitors may need explanation of how the QR codes work or may be resistant to use this technology
·Despite the widespread use of cellphones there are still many people who do not have them
·Visitors need to be made aware of the QR code as they enter the exhibits

RESOURCES NEEDED AND START-UP COSTS

Core Resources:
·AI voice generation software – many free or affordable options exist (e.g., ElevenLabs, Murf, or Google Cloud Text-to-Speech).
·Translation services – from Icelandic to English (manual or AI-assisted).
·QR code generation – free online tools (e.g., QRCode Monkey).
·Izi.travel account – free for cultural institutions.
·Photography and scriptwriting – typically done by museum staff.
·Wifi access – necessary for smooth on-site use.

Estimated Start-up Cost:
·€200–€500 depending on whether translation and scriptwriting are done in-house.
If using a freelance translator and paid AI tools, costs may be slightly higher (€500–€1,000).

POSSIBLE LOW-COST SOLUTION

This model is already very low-cost, but here's how it can be adapted for even smaller or more remote institutions:
·Use free AI voice generators (e.g., TTSMP3, Natural Readers).
·Host audio files and images on izi.travel or a free website (e.g., Google Sites).
·Skip professional translation by using basic machine translation (e.g., DeepL), with proofreading by bilingual volunteers or teachers.
·Use printed signs with QR codes and short explanations for those unfamiliar with the process.
·Encourage visitors to bring their own headphones or offer low-cost disposable ones for sale.

Estimated Low-Cost Implementation:
·€0–€200, depending on translation and hosting choices.
This makes it a highly transferable, accessible, and scalable practice for small museums and local cultural centers.

Co-funded by the European Union

4 Christmas lights in Málaga

Spain

www.visita.malaga.eu

METHOLOGY

This initiative integrates urban lighting design, digital multimedia elements, and event-based tourism strategies to create an engaging and inclusive public experience. Key components of the methodology include:

·LED light installations controlled by programmable systems for synchronized effects.

·Laser projectors and video mapping used to animate city facades and buildings.

·Music and sound design played through powerful speakers to enhance ambiance.

·Timed and remotely managed shows, updated annually to maintain novelty.

·A focus on community celebration, cultural identity, and tourism growth, especially in the off-peak winter season.

The event is designed to be scalable, energy-efficient, and repeatable, making it a model for sustainable, tech-driven urban celebrations.

SKILLS & KNOWLEDGE REQUIRED FOR EFFECTIVE IMPLEMENTATION

·Know-how in using lighting and projection tools like LED lights, laser projectors, and video mapping.

·Skills to set up and manage sound systems and coordinate music with visuals.

·Ability to organize and manage events, including planning and working with different groups.

·Creating digital content like animations and graphics to make shows more engaging.

·Managing projects by keeping track of budgets, schedules, and working with suppliers.

·Promoting the event and connecting with the community to attract a wide audience.

STRENGTHS & OPPORTUNITIES

Strengths:

·High-impact visual and cultural appeal that draws large audiences.

·Use of sustainable, energy-efficient LED technology reducing costs and environmental footprint.

·Strong community engagement fostering local pride and social cohesion.

·Well-established annual event with proven ability to boost tourism and local economy.

·Innovative multimedia shows that combine technology and art for immersive experiences.

Opportunities:

·Expanding digital interactivity to enhance visitor engagement.

·Developing partnerships with more private sponsors to increase funding and scale.

·Promoting the event internationally to attract a wider tourist base.

·Integrating more local artists and cultural content to deepen community involvement.

WEAKNESSES & THREATS

Weaknesses:

·High upfront costs for technology installation and maintenance.

·Dependence on public funding and seasonal sponsorships, which may fluctuate.

·Potential technical failures or malfunctions during shows could affect visitor experience.

·Limited accessibility for people with disabilities if not adequately addressed.

·Environmental concerns despite LED use, such as light pollution or energy consumption during peak times.

Threats:

·Competition from other cities or regions with similar holiday attractions.

·Economic downturns reducing public and private funding availability.

·Changing public interest or shifts in tourism trends impacting attendance.

RESOURCES NEEDED AND START-UP COSTS

Implementing a similar city-wide lighting event requires:

·LED lighting systems (e.g., Ecogreenlux) – starting from €10,000 to €100,000+ depending on scale.

·Lighting control software and hardware – €2,000–€15,000.

·Laser projectors and video mapping systems – €10,000–€50,000+.

·High-powered sound systems and amplifiers – €3,000–€20,000.

·Servers and computers for synchronization – approx. €3,000–€10,000.

·Creative content production (animations, soundtracks, digital displays) – €5,000–€30,000.

·Installation and logistics (technical staff, scaffolding, setup) – variable; €20,000+.

·Marketing and promotion – €5,000–€15,000.

Total start-up costs can range from €50,000 to over €250,000, depending on city size and ambition.

POSSIBLE LOW-COST SOLUTION

For smaller towns or community-level implementation, here's how a low-cost version could work:

·Use standard LED light strings or panels (~€500–€5,000 depending on size).

·Utilize free or low-cost music and lighting control apps (e.g., Vixen Lights, xLights) to create synchronized light/music shows.

·Replace video mapping with static digital projections using affordable projectors (~€300–€1,000 each).

·Employ Bluetooth or Wi-Fi timers/controllers for automated lighting control (~€50–€200).

·Collaborate with local musicians and artists for soundtracks and visual content.

·Involve volunteers or community groups for installation and promotion.

·Use social media campaigns to market the event with zero-cost distribution.

This would bring costs down to approximately €1,000–€10,000, making the event feasible for small communities or local cultural associations.

Co-funded by the European Union

5 CyprusArk - Open-Source CMS for Small Museums

Cyprus

www.https://journal.code4lib.org/articles/16722.it.it

METHOLOGY

CyprusArk is an open-source Content Management System (CMS) designed to empower small museums with limited budgets and technical expertise to digitize and publish their collections online. Key elements of the methodology include:
·KISS (Keep It Simple) design philosophy - prioritizes ease of use and low learning curve for non-technical staff.
·User-centered development - shaped by direct input from six small museums during design.
·Modular and open-source architecture, using:
·Django (web framework),
·PostgreSQL (database),
·Bootstrap (interface toolkit),
·Docker (deployment automation).
·Self-hosting flexibility - museums choose where to host the CMS (e.g., on a local server or cloud platform).
·Allows curators to upload, organize, and publish collection entries via a simplified web interface.
This methodology makes digital collection publishing accessible, scalable, and low-cost, tailored to resource-constrained institutions.

SKILLS & KNOWLEDGE REQUIRED FOR EFFECTIVE IMPLEMENTATION

- Basic Linux/Docker deployment
- CMS content management
- Familiarity with metadata standards

STRENGTHS & OPPORTUNITIES

·The system's low technical barrier to entry makes it highly scalable across Europe, and its community-driven code allows for easy adaptation

WEAKNESSES & THREATS

·A potential weakness is that it requires some basic server setup and maintenance. Furthermore, its long-term sustainability is dependent on contributions from the user community.

RESOURCES NEEDED AND START-UP COSTS

Core Resources:
·CyprusArk CMS software - free and open-source.
·Basic server (local or cloud-based) - ~€5-€15/month for small cloud hosting (e.g., DigitalOcean, Linode).
·Technical setup using Docker - initial setup may require assistance from an IT-savvy volunteer or freelancer.
·Museum staff time for entering collection content, managing metadata, and basic updates.

Estimated Start-up Cost:
·€100-€500 for:
·Hosting setup (annual)
·Basic setup support if not done in-house
·Optional training for staff
Once running, the ongoing costs are minimal, mainly tied to hosting and minor maintenance.

POSSIBLE LOW-COST SOLUTION

CyprusArk is already a low-cost, ready-to-use solution, but here's how institutions with very limited budgets can implement it even more affordably:
·Use local volunteer developers (e.g., university students) to help install and configure the system.
·Deploy it on free-tier hosting platforms (e.g., GitHub Pages for static elements; low-cost VPS for CMS).
·Share server space with other local institutions or cultural networks.
·Organize collaborative digitization workshops where staff and volunteers input metadata together.
·Use existing open metadata standards (e.g., Dublin Core) to simplify data entry and future interoperability.

Estimated Ultra-Low Cost Implementation:
·€0-€100, depending on whether volunteer support and existing infrastructure can be used.
This makes CyprusArk an ideal digital backbone for small and rural museums seeking to digitize and share their collections without needing enterprise-level systems or licensing fees.

Co-funded by the European Union

6 Digitising the Museums of Cyprus Programme

Cyprus

Https://eeagrants.org/archive/2014-2021/projects/CY-LOCALDEV-0003

METHOLOGY

This was a national-scale digitisation program (2014-2021) aimed at preserving and providing access to approximately 96,000 movable antiquities across 16 state museums and storerooms in Cyprus. Core aspects of the methodology included:
·Standardised documentation practices across institutions to ensure consistency in metadata, condition reporting, and image quality.
·High-resolution photography and archival scanning to digitize both objects and associated documentation.
·Integration of conservation data into the digitisation process, improving condition monitoring and enabling faster access to restoration data.
·Upgraded national infrastructure via the CADiP (Cultural Assets Digitisation Platform) system—improving server capacity, storage, and data resilience.
·Cross-functional collaboration among curators, conservators, data managers, and IT teams.
The project's comprehensive scope laid the foundation for open-access platforms, disaster recovery systems, and future digital exhibitions.

SKILLS & KNOWLEDGE REQUIRED FOR EFFECTIVE IMPLEMENTATION

- Archaeological documentation and digitisation
- Database management and archival standards
- Photo-scanning and digital asset handling

STRENGTHS & OPPORTUNITIES

- High-quality, comprehensive digitisation with standard practices
- Foundation for national open-access heritage portals

WEAKNESSES & THREATS

- High initial investment and infrastructure cost
- Sustaining data maintenance over time

RESOURCES NEEDED AND START-UP COSTS

Core Resources:
·Digitisation equipment (cameras, scanners, lighting).
·Condition monitoring tools and digital workflow systems.
·Central database infrastructure (CADiP platform upgrade).
·Skilled personnel: curators, conservators, photographers, IT administrators, data entry staff.
·Server hosting and long-term digital storage.

Total Project Cost:
·~€631,833, funded through EEA/Norway Grants.
While a significant investment, this cost covered digitisation across 16 institutions, representing one of the most ambitious national cultural digitisation efforts in Cyprus to date.

POSSIBLE LOW-COST SOLUTION

While the original project operated at national scale, core practices are transferable to smaller museums with fewer resources:
·Use free metadata templates (e.g., Dublin Core, Europeana Data Model) for documentation.
·Digitise in phases, starting with high-priority or fragile collections.
·Use affordable DSLR cameras or smartphone scanning apps (e.g., PhotoScan, Scaniverse).
·Store and share collections via free platforms (e.g., Wikimedia Commons, Sketchfab, Google Drive).
·Partner with local universities or cultural heritage programs for student involvement in data entry or photography.
·Adopt basic open-source CMS or inventory tools (e.g., Omeka, CollectiveAccess) for database creation.

Estimated Low-Cost Implementation:
·€500-€2,000, depending on equipment and volunteer involvement.
This allows small or regional museums to digitise and safeguard their collections progressively without heavy infrastructure investments.

Co-funded by the European Union

7 eBooks-On-Demand-Network Opening Publications for European Netizens

www.eodopen.eu

METHOLOGY

The EODOPEN project centers on digitization, accessibility, and community involvement to make 20th–21st century literary works more available across Europe. The core steps of its methodology include:

·Identifying rights-clearable works, especially grey literature and out-of-print materials.

·Simplifying copyright clearance using the Rights Clearance Documentation Tool (RCDT) and checklists.

·Training library staff in copyright, digitization, and accessibility best practices.

·Involving communities to choose which works are prioritized for digitization.

·Producing accessible digital formats, such as tagged PDFs, EPUBs, and audio files, using tools like Calibre and Robobraille.

·Publishing content on an open-access platform to reach the general public, including users with disabilities.

This methodology is scalable and modular, making it highly adaptable for small libraries and local cultural institutions.

SKILLS & KNOWLEDGE REQUIRED FOR EFFECTIVE IMPLEMENTATION

Technical Skills

·Digitization & Content Management: Knowledge of digital tools and content organization

·Rights Clearance: Understanding copyright and using tools like RCDT

·Accessibility: Expertise in creating accessible formats (e.g., EPUB, screen reader PDFs)

Project Management Skills

·Planning & Execution: Managing projects, timelines, and budgets

·Risk Management: Identifying challenges and solutions

·Monitoring & Evaluation: Tracking progress and impact

Interpersonal Skills

·Stakeholder Engagement: Communicating with teams and communities

·Training: Teaching digital tools to others

·Collaboration: Working effectively in teams

Domain Expertise

·Cultural Heritage Knowledge: Understanding materials and audience needs

·Inclusive Accessibility: Ensuring accessibility for all users

Attitudes

·Adaptability: Openness to new tools and learning

·Problem-Solving: Addressing challenges proactively

·Inclusivity: Making cultural heritage accessible to everyone

STRENGTHS & OPPORTUNITIES

·The EODOPEN project offers several key benefits for small, locally-focused cultural organisations. The Rights Clearance Documentation Tool (RCDT) is user-friendly, simplifying copyright processes. Reusable training materials, including videos and handbooks, can be easily adapted to local needs. The initiative also promotes accessible formats (EPUB, mobile, and assistive technologies), helping small institutions reach a wider audience with minimal cost. The approach is scalable and can be applied to smaller collections with limited resources.

·External factors that could enhance success include partnerships with digital access and copyright experts, which can fill skill gaps and improve the initiative's effectiveness. The growing demand for inclusive and accessible cultural content further supports the relevance of the project. Finally, community engagement in content selection ensures relevance and helps boost visibility for these institutions.

WEAKNESSES & THREATS

·The EODOPEN project faces some internal limitations, particularly regarding staff expertise. Smaller cultural organisations may lack the technical skills needed to manage digital tools and copyright processes without external support. Additionally, the high upfront costs of digitization and rights clearance may be a barrier, especially for organisations with limited budgets, and ongoing maintenance could be challenging without dedicated resources.

·Externally, there are challenges such as resistance to adopting new technologies by some institutions and audiences who are accustomed to traditional methods. Additionally, low digital literacy among certain groups could hinder the effective use of digital tools and accessible formats. Small organisations may also struggle with competition from larger institutions with more resources, and technical issues could disrupt implementation.

·These factors must be addressed to ensure the initiative's success, particularly for smaller, resource-constrained organisations.

RESOURCES NEEDED AND START-UP COSTS

Core Resources:

·Basic digitization equipment: scanner, computer, OCR software (e.g., ABBYY FineReader) – ~€500–€1,500.

·Free or low-cost tools:

·Calibre – free.

·Robobraille – some free and freemium options.

·RCDT – project-provided.

·Internet access and storage space – usually part of existing infrastructure.

·Training resources: freely available as OERs (handbooks, videos, webinars).

·Optional: EPUB creation and screen reader testing tools – free or low-cost.

Estimated Start-up Cost:

·€500–€2,000, depending on current infrastructure and need for new equipment or outsourced OCR/conversion.

POSSIBLE LOW-COST SOLUTION

Even small institutions can apply the EODOPEN model by using free tools and phased implementation:

·Digitize using existing scanners or smartphones (with scan-to-PDF apps).

·Use Calibre to convert files to EPUB, and Robobraille for audio and Braille conversion.

·Apply free accessibility practices:

·Use MS Word or Google Docs to structure headings and alt text before exporting.

·Generate tagged PDFs with free plugins or native export options.

·Share content on open platforms like Internet Archive, Europeana, or institutional websites.

·Create a local selection committee (teachers, students, historians) to choose materials to digitize.

·Use open handbooks from EODOPEN to train staff or volunteers without professional development costs.

Estimated Low-Cost Implementation:

·€0–€500, especially if leveraging free tools and in-kind support.

This approach retains key benefits (accessibility, copyright safety, and community relevance) without major expenses.

Co-funded by the European Union

8 Face-fit

Italy

www.micc.unifi.www.micc.unifi.it

METHOLOGY

Face-Fit is an AI-driven, gamified web application designed to enhance museum engagement by allowing users to mimic the facial expressions and poses of historical artworks. The methodology combines:
·Pose-matching challenges guided by AI to personalize visitor interaction.
·Gamification principles that turn visitors into active participants rather than passive observers.
·Hybrid cloud-edge architecture that performs facial expression matching on users' devices while offloading complex tasks to a remote server.
·Customisation by museums, who can upload their own collections and define challenges using an admin dashboard.
·Inclusive interaction design, such as torso-only options for wheelchair users.
·Privacy-first approach, avoiding personal data storage or biometric identification.
Visitors engage using their own devices (BYOD), which minimizes museum hardware costs and extends the experience through downloadable and shareable artwork-style images.

SKILLS & KNOWLEDGE REQUIRED FOR EFFECTIVE IMPLEMENTATION

Technical Skills
·Web Development
·AI and Machine Learning
·Database Management
·App Customisation and Deployment

Project Management Skills
·Planning & Coordination
·Budgeting & Resource Allocation
·Risk Management

Interpersonal Skills
·Communication & Collaboration
·Customer-Centric Mindset
·Stakeholder Engagement

Domain-Specific Expertise
·Cultural Heritage Knowledge
·Gamification & User Engagement
·Legal & Ethical Knowledge

Attitudes
·Openness to Innovation
·Adaptability
·Commitment to Sustainability

STRENGTHS & OPPORTUNITIES

·User-friendly interface – Easy adoption by museums and visitors
·Low start-up costs – Open-source tech eliminates licensing fees
·Minimal hardware requirements – Works on mid-range devices, reducing infrastructure costs
·BYOD compatibility – Visitors can use their own smartphones, reducing museum costs
·Gamified engagement – Increases visitor interaction, especially among younger audiences
·Customisation – Museums can tailor content and challenges to their collections and needs
·Privacy-friendly AI – Client-side processing ensures privacy and compliance with GDPR

WEAKNESSES & THREATS

·Artificial vision systems and expression recognition are one of the focal points of the ethical debate on artificial intelligence and, not surprisingly, they represent one of the most closely monitored technologies within the new AI Act of the European Union. It is therefore essential for the museum, both ethically and legally, to clarify that no automatic identity recognition policy is implemented, nor is any record of the user's physical traits. The application should cover a broad range of physical traits. Finally, since this type of app uses images of artworks, it is important for the museum to properly manage the usage and sharing rights, whether the artworks belong to the museum or other museums. In line with these ethical considerations, the apps developed in the ReInHerit project are based on specific 'ReInHerit Ethics Cards,' developed by the Consortium partners to address various issues, such as the correct training of artificial intelligence, user data protection, and respect for the rights to the images of the artworks used. (20190317_museums-and-ai-toolkit_rl_web_ita_v2-1.pdf)

RESOURCES NEEDED AND START-UP COSTS

Core Resources:
·Web-based front-end (JavaScript) and backend (Python with Docker) – open-source, customizable.
·AI frameworks like TensorFlowJS (client-side) and OpenCV (server-side) – free and widely used.
·Server or cloud hosting for backend tasks (color correction, data handling) – ~€10–€50/month.
·Basic museum staff training for the admin dashboard – minimal once installed.
·Smartphones or tablets – users bring their own (BYOD model).
·Optional: Touchscreen kiosks or tablets for public use – ~€300–€1,000 each.

Estimated Start-up Cost:
·If BYOD model: ~€500–€2,000 (mostly for backend setup and deployment).
·If hardware provided by museum: ~€3,000–€5,000+, depending on the number of devices

POSSIBLE LOW-COST SOLUTION

Face-Fit's design is inherently cost-effective, but here are further simplified options for small or local institutions:
·Use BYOD only: Avoid kiosk setups—visitors use their own smartphones with a QR code link to the app.
·Run on a shared hosting plan or free-tier cloud platform (e.g., Heroku, Render, or Replit).
·Leverage free AI models and pre-trained components (Face Mesh, MobileNetV2 via TensorFlowJS).
·Customize content using only museum-owned artworks with no external image licensing.
·Offer social sharing via downloadable image links without email integration, simplifying backend requirements.

Estimated Low-Cost Implementation:
·€0–€500, especially if you host on a free cloud tier and use open-source tools and templates.
This approach retains the interactive and gamified experience while remaining accessible for small museums, schools, or community-based heritage organizations.

Co-funded by the European Union

9 Interactive app - 3D Modelling and Digital Mapping of Hillforts

Croatia

www.mck-sinj.hr

METHOLOGY

This initiative combines archaeology, photogrammetry, and digital mapping to document prehistoric hillforts across Croatia and Bosnia and Herzegovina. The methodology includes:
·Drone-based reconnaissance to gather high-resolution imagery of archaeological sites.
·Photogrammetry to create accurate 3D models of hillforts and surrounding landscapes.
·Digital mapping with GIS tools, providing precise geolocation and context.
·Interactive mobile/web application offering virtual tours and educational resources for general users and researchers.
·Cross-border collaboration, integrating heritage data across national boundaries and promoting a shared cultural narrative.
This hybrid approach of fieldwork and digital interpretation is designed to preserve vulnerable heritage, support education, and engage the public through immersive digital tools.

SKILLS & KNOWLEDGE REQUIRED FOR EFFECTIVE IMPLEMENTATION

·Photogrammetry and drone operation skills
·3D modelling and rendering
·Knowledge of archaeological surveying and site interpretation
·App development and UI/UX design
·Project management in cross-sector environments
·Communication skills for community engagement
·Data organisation and metadata management (for digital heritage)

STRENGTHS & OPPORTUNITIES

·Innovative use of affordable technology (drones, photogrammetry)
·Strong collaboration between archaeology and IT sector
·Digital preservation of endangered or inaccessible sites
·Growing interest in virtual heritage experiences
·High potential for educational use and cultural tourism
·Opportunity for cross-border EU funding

WEAKNESSES & THREATS

·Limited resources for long-term maintenance and content updates
·Dependence on expert knowledge (e.g., 3D modelling, GIS)
·Possible technical challenges with app deployment or cross-platform compatibility
·Risk of low public digital literacy in rural areas
·Need for continuous interdisciplinary collaboration

RESOURCES NEEDED AND START-UP COSTS

Core Resources:
·Drone and camera equipment – available for under €1,500 or via partnerships.
·Photogrammetry software (e.g., Agisoft Metashape, RealityCapture) – ~€500–€1,000 (educational or non-commercial licenses may be cheaper).
·3D modelling tools (e.g., Blender – free; Autodesk – licensed).
·GIS and mapping software (e.g., QGIS – free; ArcGIS – licensed).
·Mobile or web app development (in-house or with freelance developer).
·Skilled staff or external collaborators in archaeology and IT.

Estimated Start-up Cost:
·€5,000–€15,000, depending on:
·Drone and software access
·Developer or IT collaborator fees
·Fieldwork logistics
·Hosting and app deployment
Much of this cost can be minimized via in-kind contributions or partnerships with universities or tech communities.

POSSIBLE LOW-COST SOLUTION

This initiative combines archaeology, photogrammetry, and digital mapping to document prehistoric hillforts across Croatia and Bosnia and Herzegovina. The methodology includes:
·Drone-based reconnaissance to gather high-resolution imagery of archaeological sites.
·Photogrammetry to create accurate 3D models of hillforts and surrounding landscapes.
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This hybrid approach of fieldwork and digital interpretation is designed to preserve vulnerable heritage, support education, and engage the public through immersive digital tools.

Co-funded by the European Union

10 Musea.hr

Croatia

www.mck-sinj.hr

METHOLOGY

Musea.hr is a centralized digital platform that connects museums with schools and the general public by offering curriculum-aligned, multimedia educational content. The core methodology includes:
·Collaborative content creation by museum professionals and educators to align museum knowledge with national curricula.
·Multimedia delivery using videos, games, digital worksheets, and podcasts to support diverse learning styles and increase engagement.
·Student participation in content development—especially through the "Malci kulturnjaci" podcast—fostering media literacy and ownership.
·Content filtering and categorization ensure that children access age-appropriate, safe, and educational materials.
·Low-barrier access: the platform is free to use, simple to navigate, and optimized for widespread use by schools and small museums.
This model promotes interactive learning, cultural awareness, and cross-sector collaboration, making it an excellent tool for digitally enhanced museum education.

SKILLS & KNOWLEDGE REQUIRED FOR EFFECTIVE IMPLEMENTATION

·Basic to intermediate digital literacy
·Content creation and curation (educational materials, media production)
·Knowledge of curriculum and museum pedagogy
·Project planning and cross-sector collaboration
·Communication and public engagement skills
·Understanding of digital platforms and CMS tools
·Podcast production and basic audiovisual editing

STRENGTHS & OPPORTUNITIES

·Free, user-friendly interface suitable for schools and museums
·Strong pedagogical and professional base of content
·Customisable and expandable platform
·High adaptability for small and local institutions
·Growing demand for digital educational tools post-pandemic
· Opportunity for broader regional or EU-level implementation

WEAKNESSES & THREATS

·Need for continuous content updating and technical maintenance
·Limited staff and budget in smaller cultural institutions for full participation
·Potential resistance to digital tools by traditional educators
·Varied digital literacy among users
·Reliance on external funding for further development

RESOURCES NEEDED AND START-UP COSTS

Core Resources:
·Custom-built web platform (muzea.hr) – developed with a user-friendly CMS for museums.
·Content creators and curators – museum staff, educators, and digital media experts.
·Basic podcast/audio production tools – microphone, recording software (e.g., Audacity), hosting platform.
·Graphic designers or illustrators – for games and worksheets.
·Project coordination – cross-sector collaboration and communication.

Estimated Start-up Cost:
·€5,000–€15,000, depending on:
·Platform development
·Initial content creation
·Media production (videos, podcast)
·Promotion and outreach
This range reflects the need for custom development and initial high-quality content investment, but ongoing costs can be minimized through partner contributions and open-source tools.

POSSIBLE LOW-COST SOLUTION

Smaller institutions can replicate core elements of Musea.hr without the need for full platform development:
·Host content on free platforms like Google Sites or WordPress.
·Use YouTube or SoundCloud for videos and podcasts.
·Create simple, printable educational materials (PDF worksheets, activity guides).
·Collaborate with local schools and teachers to co-create content tied to the curriculum.
·Encourage student-led media projects, even using smartphones for audio or video capture.
·Share materials via social media or educational networks, reducing reliance on a dedicated portal.

Estimated Low-Cost Implementation:
·€100–€1,000, mostly for training, volunteer coordination, and minimal media production.
This ensures access to museum education for schools and students, even in resource-constrained environments.

Co-funded by the European Union

11 Spod Lady

Poland

www.ludowy.pl

METHOLOGY

The Spod Lady initiative blends immersive theatre, Live Action Role-Playing (LARP), and lightweight digital support to deliver a deeply engaging educational experience. Core elements of the methodology include:
·Role-play in historical settings, placing participants in 1960s Nowa Huta as fictional citizens experiencing real socio-political themes.
·Interactive, participant-driven narratives, where each session's outcome depends on player choices and improvisation.
·Game design principles (missions, character sheets, objectives) embedded within a theatrical environment.
·A custom web app introduces the storyline, roles, and LARP mechanics before the in-person event.
·Facilitated workshops and in-character roleplay enable social learning around power, identity, and historical context.
This model is highly participatory, emotionally immersive, and adaptable to local stories or educational goals.

SKILLS & KNOWLEDGE REQUIRED FOR EFFECTIVE IMPLEMENTATION

Knowledge
·Knowledge of interactive web apps, digital storytelling platforms, and mobile-responsive environments
·Basic understanding of UX/UI principles
Awareness of tools for managing character databases, audience flow, or guided interaction
·Knowledge of informal learning principles
·Understanding of LARP (Live Action Role-Playing) mechanics

Skills
·Basic UX/UI design or ability to collaborate with designers/developers
·Use of digital platforms for:
·Content deployment (e.g., websites or in-app storytelling)
·Participant onboarding or role assignment
·Designing immersive experiences with clear objectives

Attitudes
·Comfort in sharing authorship with participants
·Willingness to experiment with hybrid formats that combine analog and digital

STRENGTHS & OPPORTUNITIES

Strengths
·Low-Tech, High-Engagement Model
Uses minimal technology (mostly analog props and settings) combined with a lightweight digital app, keeping costs and tech barriers low while maximizing immersion.
·User-Friendly Digital Layer
A web-based app provides intuitive character and role management without overwhelming the experience with complex tech.
·Educational and Locally Relevant
Grounded in a city's real history, it connects directly with local identity and civic memory, making it highly relatable and easily adaptable in local communities.
·Blended Formats (Theatre + Game + Education)
Combines storytelling, gameplay, and learning, an attractive, dynamic formula for school groups and younger audiences.
·Modular and Scalable Format
Can be implemented in small venues, libraries, or community centres—ideal for cultural operators with limited infrastructure.
·Modular and Scalable Format
Can be implemented in small venues, libraries, or community centers—ideal for cultural operators with limited infrastructure.

Opportunities
·Cross-sector Partnerships
Collaborations with educators, local historians, and accessibility experts can enhance relevance, inclusiveness, and reach.
·Growing Demand for Participatory Culture
Audiences increasingly seek interactive, co-created cultural experience, especially youth
·Funding from Inclusion & Digitalisation Programs
Aligns with priorities in EU/national funding around digital inclusion, youth engagement, and cultural accessibility.

WEAKNESSES & THREATS

Weaknesses
·Staff Expertise Requirements
Successful delivery depends on a multidisciplinary team (theatre direction, LARP design, education, digital facilitation), which small organisations may lack in-house.
·Limited In-House Digital Capacity
While the digital layer is modest, even basic app development or UX design can exceed the skills or budget of smaller organisations.
·Complex Planning and Facilitation Needs
Designing coherent, immersive, and participatory narratives with open-ended structures requires significant preparation time and facilitation training.
·Resource-Intensive for First Implementation
Custom scripts, character sheets, props, set design, and onboarding procedures represent a heavy initial investment of time and creative labour
·Limited Audience Throughput
Due to the participatory nature, group sizes are small. This limits audience volume per session, making scaling or monetization harder for small operators.

RESOURCES NEEDED AND START-UP COSTS

Though lower-tech than VR or projection-heavy projects, Spod Lady requires a creative and well-organized setup:
Core Resources:
·Web application for character briefs and onboarding – €2,000-€10,000 (or open-source adaptation).
·Printed character sheets, costumes, props – €500-€2,000 (reusable).
·Set design or transformed venue (e.g., delicatessen) – depends on scope, €1,000-€5,000.
·Script and narrative design – labor-intensive but reusable; can be done in-house or via collaboration.
·Training for facilitators – €500-€2,000 for initial sessions/workshops.
·Technical team (for app support and UX) – may require freelance UX/UI help if not in-house.

Estimated Start-up Cost:
·Approximately €5,000 to €20,000, depending on the scale and whether elements like the app are custom-built or adapted from existing tools.

POSSIBLE LOW-COST SOLUTION

A low-budget version of Spod Lady can still preserve its essence using simple adaptations:
·Skip the custom app – instead, use Google Forms or a free website (like Carrd or Notion) to share character profiles and game instructions.
·Use community spaces (libraries, classrooms, empty storefronts) instead of building elaborate sets.
·Repurpose thrifted costumes and props, reducing visual production costs.
·Leverage volunteers or drama students to help facilitate and play anchor characters.
·Use printed handouts or QR codes instead of a web interface for onboarding.

Estimated Low-Cost Implementation:
·Around €500 to €2,000, primarily for printing materials, minor props, and facilitator stipends.
This stripped-down approach maintains the core participatory and educational goals while making it feasible for smaller communities or cultural organizations with limited funding.

Co-funded by the European Union

12 Strike-a-pose

Italy

www.micc.unifi.it

METHOLOGY

Strike-a-Pose is a web-based, AI-driven pose-matching application that enhances museum engagement through gamification. The methodology focuses on:
·Pose matching: Visitors replicate poses from artworks (e.g., statues or paintings), guided by AI that evaluates their accuracy using TensorFlowJS MoveNet, a real-time pose detection model.
·Client-side AI processing: All pose analysis occurs on the visitor's device, ensuring privacy (no personal data storage).
·Gamified structure: Participants unlock information and receive feedback as they progress through challenges.
·Customisation options: Museums can adapt challenges to their collections, themes, or accessibility goals (e.g., torso-only for wheelchair users).
·Digital engagement tools: Users receive shareable videos of their interaction, extending the museum visit online.
·BYOD-friendly design: Optimized for mobile and tablet use, reducing infrastructure needs for the institution.
This modular, privacy-conscious methodology combines interactive storytelling, educational goals, and digital personalization.

SKILLS & KNOWLEDGE REQUIRED FOR EFFECTIVE IMPLEMENTATION

Technical Skills
· Web Development
· AI and Machine Learning
· Database Management
· App Customisation and Deployment

Project Management Skills
· Planning & Coordination
· Budgeting & Resource Allocation
· Risk Management

Interpersonal Skills
· Communication & Collaboration
· Customer-Centric Mindset
· Stakeholder Engagement

Domain-Specific Expertise
· Cultural Heritage

Knowledge
· Gamification & User Engagement
· Legal & Ethical Knowledge

Attitudes
· Openness to Innovation
· Adaptability
· Commitment to Sustainability

STRENGTHS & OPPORTUNITIES

·User-friendly interface – Easy adoption by museums and visitors
·Low start-up costs – Open-source tech eliminates licensing fees
·Minimal hardware requirements – Works on mid-range devices, reducing infrastructure costs
·BYOD compatibility – Visitors can use their own smartphones, reducing museum costs
·Gamified engagement – Increases visitor interaction, especially among younger audiences
·Customisation – Museums can tailor content and challenges to their collections and needs
·Privacy-friendly AI – Client-side processing ensures privacy and compliance with GDPR

WEAKNESSES & THREATS

·Artificial vision systems and expression recognition are one of the focal points of the ethical debate on artificial intelligence and, not surprisingly, they represent one of the most closely monitored technologies within the new AI Act of the European Union. It is therefore essential for the museum, both ethically and legally, to clarify that no automatic identity recognition policy is implemented, nor is any record of the user's physical traits. The application should cover a broad range of physical traits; similarly, it is important that apps like Strike-a-Pose work properly with users with various disabilities, such as wheelchair users. In the case of Strike-a-Pose, the curator can select only some parts of the artwork to replicate, such as the bust. Finally, since this type of app uses images of artworks, it is important for the museum to properly manage the usage and sharing rights, whether the artworks belong to the museum or other museums. In line with these ethical considerations, the apps developed in the ReInHerit project are based on specific 'ReInHerit Ethics Cards,' developed by the Consortium partners to address various issues, such as the correct training of artificial intelligence, user data protection, and respect for the rights to the images of the artworks used. (20190317_museums-and-ai-toolkit_rl_web_ita_v2-1.pdf)

RESOURCES NEEDED AND START-UP COSTS

Core Resources:
·Open-source tech stack:
·JavaScript / HTML5 frontend
·Python (Flask) backend
·SQLite for data management
· Docker for simplified deployment
·TensorFlowJS MoveNet – free for client-side pose detection.
·Basic server or hosting setup – €10–€50/month.
·Admin dashboard – included in the application.
·Optional touchscreen/kiosk devices – €300–€1,000 per device if not BYOD.

Estimated Start-up Cost:
·€500–€2,000 if using BYOD and existing infrastructure.
·€3,000–€5,000+ if including touchscreen displays and in-house deployment support.

POSSIBLE LOW-COST SOLUTION

Strike-a-Pose can be effectively implemented on a limited budget, especially for small museums or cultural venues:
·Run entirely via BYOD: No need for kiosks—users access via a QR code or short link.
·Deploy on free-tier cloud services (e.g., Heroku, Replit, or GitHub Pages for frontend).
·Use freely available artworks (e.g., public domain collections) to avoid licensing issues.
·Offer simplified pose challenges that focus on upper body, reducing the need for full-body tracking and accommodating more users.
·Skip video-sharing features if server load or storage is a concern—offer static image capture or live feedback only.

Estimated Low-Cost Implementation:
·€0–€500, using free platforms, open-source code, and BYOD-only access.
This makes Strike-a-Pose an ideal interactive tool even for resource-limited institutions wanting to modernize their visitor experience.

Co-funded by the European Union

13 The DE-BIAS Project

https://www.dff.film/en/

METHOLOGY

The DE-BIAS Project uses a data-driven, ethical, and community-informed methodology to detect and reduce cultural bias in digital heritage metadata. Key elements include:
·Automated metadata audits using NLP and NER to identify biased or exclusionary language.
·Use of a multilingual controlled vocabulary to guide respectful, inclusive terminology choices.
·A web-based, user-friendly bias detection tool that allows institutions to upload and review metadata.
·API integration for automated, real-time metadata scanning in advanced systems.
·Open-access educational materials (courses, guidelines, glossaries) to build institutional capacity.
·Community engagement models to involve marginalized groups in the description and interpretation of cultural collections.
The methodology is modular and scalable, adaptable for both large institutions and small archives.

SKILLS & KNOWLEDGE REQUIRED FOR EFFECTIVE IMPLEMENTATION

Knowledge
·Understanding of metadata standards and cataloguing practices.
·Awareness of inclusive language, bias, and diversity in cultural heritage.
·Basic familiarity with how AI and text analysis tools work.

Digital Skills
·Ability to use web-based tools and interpret analysis results.
·Competence with spreadsheets for reviewing and editing metadata.
·Basic knowledge of integrating APIs (Application Programme Interface) into existing systems.

Project & Planning Skills
·Ability to plan metadata audits and allocate staff time.
·Skills in documenting changes and evaluating progress.
·Capacity to engage external communities or stakeholders for feedback.

Interpersonal Skills
·Clear, inclusive communication—especially when discussing sensitive terminology.
·Collaborative mindset to work across teams or with community partners.
·Openness to feedback and co-creation.

Attitudes
·Commitment to inclusion and ethical representation.
·Openness to changing legacy practices.
·Attention to detail and willingness to question existing standards.

STRENGTHS & OPPORTUNITIES

Strengths
·Open-Access and Free Tools
All DE-BIAS tools, vocabulary lists, and training materials are openly available at no cost, removing financial barriers for small institutions.
·User-Friendly Interface
The DE-BIAS tool is accessible via a simple web application and includes clear suggestions, contextual explanations, and multilingual support.
·Low Technical Skill Requirement
Designed for non-technical cultural professionals; no coding or system integration required for using the standalone version.
·Ready-to-Use Training Resources
Interactive courses, guides, and glossaries are tailored for cultural staff without prior DEI or digital training.
·Modular Use
Institutions can use just the parts they need (e.g., vocabulary, auditing tool, or community engagement templates) making the project highly adaptable.

Opportunities
·Growing Institutional Focus on Diversity and Inclusion
Rising public and policy expectations for cultural organisations to address equity and representation strengthen the project's relevance.
·Potential for Local Partnerships
The initiative's methods are ideal for collaboration with local schools, community archives, and advocacy groups to enhance inclusive documentation.

WEAKNESSES & THREATS

Weakness
·Initial Development Complexity
While the tools are open-access, the development of AI-based solutions and multilingual vocabularies required high technical expertise and coordination that may be difficult for small institutions to replicate independently.
·Limited Local Customisation Support
Adapting the vocabulary or tool for highly specific regional or community contexts may require additional digital or linguistic capacity.
·Dependency on Metadata Quality
The tool is most effective when metadata is already structured and machine-readable. Many small institutions may have inconsistent or unstandardised metadata, limiting the tool's impact without prior data cleaning.
·Training Time Investment
Although resources are user-friendly, staff still need time to engage with the training and implement the changes, which may be challenging in understaffed environments.

Threats
·Low Digital Literacy Among Staff or Volunteers
In small cultural institutions, particularly in rural or under-resourced areas, there may be difficulty in using even simple digital tools.
·Resistance to Change or Terminology Updates
Updating historically embedded language in catalogues may encounter institutional or stakeholder resistance due to heritage concerns or fear of 'erasing' past terminology.
·Language Adaptation Barriers
Although the tool supports multiple major European languages, local dialects or minority languages common in smaller communities may not be covered.

RESOURCES NEEDED AND START-UP COSTS

While the DE-BIAS tool itself is free and open source, implementation does involve some minimal to moderate resource allocation:
·Web browser and internet access – no installation required.
·Staff time for training and metadata review – cost varies by institution.
·Spreadsheet software (e.g., Excel, Google Sheets) – many options are free or already in use.
·Optional: Server access/API integration support – may require IT personnel in larger organizations.

Estimated start-up costs:
·Free for basic use of the tool and materials.
·€500–€2,000 for part-time staff training and metadata review (in smaller institutions).
€5,000+ if deeper integration or dedicated DEI training sessions are pursued with consultants.

POSSIBLE LOW-COST SOLUTION

Since the DE-BIAS platform already offers open-access, cost-efficient resources, it is the low-cost solution for inclusive metadata auditing. However, institutions with very limited resources could implement a simpler approach by:
·Using only the controlled vocabulary (available in multiple languages) to manually scan and update metadata – free.
·Engaging volunteers or students from local universities for metadata review projects – cost-effective and educational.
·Downloading and printing the training materials or glossaries for offline workshops – no software needed.
·Hosting a community review day, where community members help audit and enrich cultural metadata – minimal financial investment, high cultural return.
These strategies allow institutions to apply DE-BIAS principles even without digital infrastructure or tech skills.

Co-funded by the European Union

14 The Digital National Shoe Collection

The Netherlands

www.schoenenkwartier.nl

METHOLOGY

The Digital national Shoe collection is a self-guided exhibit that collects the shoes of our visitorsin the museum's permanent exhibition. The methodology emphasizes:
·Digital collecting of shoes people wear today of by making a photo of the shoe and asking a few questions and collect the data into a database.
·Engagement with heritage - by asking questions at the database; how many women of 50 are wearing blue boots? (an example)
·Accessibility for almost everyone
·Online availability of your shoe results by e-mail
·Community co-creation: the content is developed in collaboration with the visitors.
This approach merges interaction, building a digital contemporary collection of shoes of the visitors and inclusive storytelling, comparing, asking questions about your shoes and others, low-tech model for reinterpreting collecting.

SKILLS & KNOWLEDGE REQUIRED FOR EFFECTIVE IMPLEMENTATION

·Knowledge of making a good exhibit, working together with a designer
·Processing the email address to the mail system
·Promoting exhibit during the visit and on social media, news media
·Stable wifi connection inside museum
·Good research skills to discover ´hidden´ stories and connections in the collection

STRENGTHS & OPPORTUNITIES

·Low technology investment and material costs
·User friendly
·Accessible: both standing and wheelchair visitors can enjoy the exhibit on site by being able to sit or stand for the photo making
·The first digital shoe collection of The Netherlands is being created by the visitors themselves

WEAKNESSES & THREATS

·Requires some level of digital experiences
·Visitors have to take some time during their visit

RESOURCES NEEDED AND START-UP COSTS

Core Resources:
·Designer
·Exhibit builder
·ICT knowledge and hosting the database
·Online hosting platform

Estimated Start-up Cost:
·€10.000 for initial research, designer, building, ICT network—assuming staff does most of the work in-house.

Ongoing costs are minimal and limited to content updates and optional reprints.

POSSIBLE LOW-COST SOLUTION

This initiative can be replicated by small museums with very limited budgets:
·By skipping the exhibit and just make photo's of the shoes of the visitors

Estimated Low-Cost Implementation:
·€0-€200, without the labour

This model allows contemporary collecting, but know interaction with the collection.

Co-funded by the European Union

15 The Last Days of Pompeii: The Immersive Exhibition

Spain

www.madridartesdigitales.com

METHOLOGY

The immersive exhibition employs a multi-sensory digital approach that combines:

·360° projections and dynamic lighting to recreate ancient Pompeii's atmosphere.

·Virtual reality (VR) headsets and navigation controllers to allow visitors to explore digital reconstructions of Pompeii landmarks like the Villa of the Mysteries.

·Video mapping and 3D modeling software to simulate realistic environments and events, such as the eruption of Mount Vesuvius.

·Metaverse integration, enabling personalized, interactive engagement with avatars and virtual environments.

This methodology promotes experiential learning, combining storytelling with interactivity to deepen understanding and memory retention.

SKILLS & KNOWLEDGE REQUIRED FOR EFFECTIVE IMPLEMENTATION

·Knowledge of VR, AR, and 360° projection to run the tech smoothly

·Skills in 3D modeling, video mapping, and designing immersive media

·Ability to manage servers, powerful computers, and networks

·Understanding how to combine digital content with historical stories

·Expertise in making digital experiences engaging and easy to use for all audiences

·Quick problem-solving skills to keep technology running without issues

STRENGTHS & OPPORTUNITIES

Strengths

·Advanced immersive technology like 360° projections, VR, and the metaverse create a unique experience

·Digital tools make culture accessible to diverse audiences

·Immersive experiences improve learning and memory

·Interactive elements encourage curiosity and emotional connection

Opportunities

·Potential to expand into new international markets

·Chance to partner with educational and cultural institutions

·Ongoing tech improvements could enhance VR and metaverse experiences

·Opportunity to create permanent exhibitions in other locations

·Virtual tours and live events can attract remote audiences

WEAKNESSES & THREATS

Weaknesses

·Appeals mainly to tech-savvy visitors, limiting audience

·Needs specialized staff and resources for setup

·Requires a lot of space for large-scale exhibitions

Threats

·More competition from other immersive exhibits may reduce uniqueness

·Economic downturns and budget cuts can impact sales

·Changes in public interests might lower engagement

RESOURCES NEEDED AND START-UP COSTS

Implementing a similar exhibition requires:

·Projectors and dynamic lighting systems – €5,000–€50,000+ depending on scale.

·High-performance servers and computers – Approx. €3,000–€10,000 per unit.

·VR headsets and controllers (e.g., Meta Quest, HTC Vive) – €400–€1,200 each.

·Metaverse or immersive platform licensing – €1,000+ annually or custom development costs.

3D modeling and video mapping software (e.g., Unity, Unreal Engine, Resolume) – Some tools are free; pro licenses can cost €300–€2,000+.

·Technical staff and specialists – €30,000–€100,000+ annually (depending on team size and expertise).

Total start-up costs can range from €50,000 to €500,000+, depending on scale, custom development, and staffing.

POSSIBLE LOW-COST SOLUTION

To implement a simplified or low-cost version:

·Use low-cost or refurbished VR headsets (e.g., Meta Quest 2) – around €300.

·Replace metaverse elements with interactive 360° tours using platforms like ThingLink or Genial.ly – from free to €25/month.

·Use free 3D modeling tools (e.g., Blender) and game engines (Unity or Unreal Engine – free tiers available).

·Replace large-scale projections with desktop-based simulations or mobile AR experiences (e.g., WebAR via 8thWall or ZapWorks – free or basic plans available).

·Partner with local universities for student collaborations on 3D assets and immersive storytelling.

This brings the entry-level cost down to €1,000–€5,000, with scalable upgrades later.

Co-funded by the European Union

16 The Rainbow Thread, a queer road map

Iceland

www.thjodminjasafn.is

METHOLOGY

The Rainbow Thread is a self-guided queer-themed audio tour that overlays LGBTQ+ perspectives onto the museum's permanent exhibition. The methodology emphasizes:

·Highlighting underrepresented histories by guiding visitors to 11 specific exhibition points with connections to LGBTQ+ narratives.

·Critical engagement with heritage – challenging heteronormative assumptions and emphasizing that gender and sexuality are fluid across time.

·Multi-format accessibility: audio content (in English and Icelandic) is paired with a printed or downloadable pamphlet.

·Online availability via SoundCloud and the museum's website allows remote or mobility-restricted users to access the experience.

·Community co-creation: the content was developed in collaboration with Samtökin '78, Iceland's national LGBTQ+ organization.

This approach merges interpretive storytelling, community activism, and inclusive pedagogy, creating a culturally sensitive, low-tech model for reinterpreting national narratives.

SKILLS & KNOWLEDGE REQUIRED FOR EFFECTIVE IMPLEMENTATION

·Knowledge of recording and uploading audio files to museum website, and providing link to exhibition visitors´

·Printing accompanying brochure, and ensuring itös available for visitors.

·Promoting exhibition on social media, news media

·Stable wifi connection inside museum

·Ability for collaboration with outside LGBTQ organizations

·Good research skills to discover ´hidden´stories and connections

·Ability and desire to tell LGBTQ+ stories in the face of possible opposition from outside sources.

STRENGTHS & OPPORTUNITIES

·Low technology investment and material (printing) costs

·User friendly

·Accessible: both hearing and visually impaired visitors can enjoy the exhibition on site by being able to both read and listen or both!

·Exhibition is also accessible free of charge for those outside Iceland, or those that cannot travel to the building due to physical limitations.

WEAKNESSES & THREATS

·No physical descriptions of the exhibits were offered, only the stories attached to them.

·Visitors accessing exhibition online can only hear the stories and not see the exhibitions they are connected to.

·Requires some level of subject expertise and familiarity with subject matter

·Visitors must have a cellphone and headphones with them

RESOURCES NEEDED AND START-UP COSTS

Core Resources:

·Scriptwriting & research – identifying queer-related narratives tied to the museum's existing exhibits.

·Collaboration with LGBTQ+ communities/experts – especially for sensitivity and authenticity.

·Audio recording equipment or use of smartphones and free editing software (e.g., Audacity).

·Online hosting platform – e.g., SoundCloud (free tier available).

·Printed pamphlets – bilingual and mapped to the exhibition (~€50–€150 initial print run).

·Museum website integration – linking to SoundCloud/audio content.

·Promotional campaign – using social media and newsletters.

Estimated Start-up Cost:

·€300–€800 for initial research, recording, printing, and outreach—assuming staff does most of the work in-house.

Ongoing costs are minimal and limited to content updates and optional reprints.

POSSIBLE LOW-COST SOLUTION

This initiative can be easily replicated by small museums with very limited budgets:

·Use a free recording app (e.g., Voice Memos, Audacity) and host files on SoundCloud or YouTube.

·Design a basic PDF guide with QR codes linking to each audio track.

·Collaborate with local LGBTQ+ groups or historians to source stories.

·Advertise through local schools, libraries, and LGBTQ+ networks for community reach.

·Encourage visitors to use their own smartphones and headphones (BYOD model).

Estimated Low-Cost Implementation:

·€0–€200, especially if materials are shared digitally and no physical printing is required.

This model allows for inclusive, critical storytelling in small or rural institutions with minimal infrastructure or technical expertise.

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17 The RETOLD project

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METHOLOGY

The RETOLD Project uses a structured, inclusive, and digital-first methodology to help museums and cultural institutions document and preserve both tangible and intangible heritage. Key elements include:
·Standardized digital forms to consistently document traditional crafts, reconstructed buildings, tools, and practices.
·Visual documentation using photography, video, 360° imagery, and 3D photogrammetry to capture cultural knowledge in accessible formats.
·Web-based repository to store and share data openly, enabling collaboration and access for researchers, educators, and the public.
·Digital workflows for non-specialists, allowing small institutions to implement the method with minimal tech skills.
·Storytelling-based dissemination, using multimedia content to engage wider audiences.
This methodology balances structure with flexibility, making it applicable across institutions of varying sizes and technical capacities.

SKILLS & KNOWLEDGE REQUIRED FOR EFFECTIVE IMPLEMENTATION

Knowledge
·Documentation methods for tangible and intangible heritage
·Traditional crafts and vernacular architecture
·Basics of digital preservation and open-access standards
·Oral history and ethnographic recording techniques
·Introductory 3D, video, and photography concepts
Technical and Digital Skills
·Use of digital documentation forms and online repositories
·Basic photo, video, and 360° content capture
·Simple multimedia editing (e.g., cropping, trimming)
·Metadata entry and content uploading
·Familiarity with open digital tools for heritage sharing
Planning and Project Management Skills
·Organising documentation workflows and timelines
·Coordinating volunteers, craftspeople, and resources
·Managing data archives and structured records
·Collaborating within museum networks and partnerships
Interpersonal and Communication Skills
·Engaging and interviewing community members and craftspeople
·Facilitating collaboration between technical and non-technical staff
·Explaining project goals and tools to diverse audiences
·Building trust and long-term partnerships
Attitudes
·Openness to digital methods and lifelong learning
·Respect for local knowledge and community contribution
·Commitment to heritage preservation and public access
·Patience, attention to detail, and consistency
·Willingness to adopt shared standards and collaborate

STRENGTHS & OPPORTUNITIES

Strengths
·User-Friendly Tools
The documentation forms, video guides, and digital platforms are designed for use by non-technical staff and volunteers.
·Low-Cost Implementation
Tools rely on common devices (e.g., smartphones, basic cameras) and open-source platforms, minimizing the need for expensive infrastructure.
·Standardised Workflows
Easy-to-follow processes allow consistent documentation of buildings, crafts, and oral traditions across different institutions.
·Scalable and Adaptable
The methods are flexible enough to be used by both large open-air museums and small community heritage groups.
Enhanced Accessibility and Sharing
Digitised data and 3D content are stored in an open-access repository, making collections more visible and reusable.

Opportunities
·Partnerships with Craftspeople and Local Experts
Collaboration with tradition bearers enriches documentation and fosters stronger community ties.
·Increased Demand for Digital Heritage
Growing public interest in virtual tours, 3D reconstructions, and accessible storytelling.
·Civic Interest in Local Histories
Communities seeking to reconnect with their heritage may support and participate in initiatives that preserve and showcase local culture.

WEAKNESSES & THREATS

Weaknesses
·Need for Initial Training and Adaptation
Staff and volunteers may require time and support to understand and apply the standardised workflows and digital tools effectively.
·Limited Technical Infrastructure
Some small museums may lack reliable equipment (e.g., cameras, scanners) or internet access needed for documentation and uploading data.
·Time and Resource Constraints
Documentation, especially of intangible heritage, is labour-intensive and may be difficult for understaffed organisations to sustain.
·Dependence on Skilled Practitioners
Capturing authentic craft knowledge depends on the availability and willingness of tradition bearers, who may be difficult to engage or geographically dispersed.

Threats
·Low Digital Literacy Among Staff or Communities
Some institutions or community partners may be unfamiliar with digital tools, limiting effective participation or use of outputs.
·Technological Obsolescence
Evolving digital formats and tools may require ongoing updates or migration, which small organisations may struggle to maintain.
·Inconsistent Funding or Policy Support
While RETOLD aligns with current priorities, long-term sustainability depends on continuous institutional or governmental support

RESOURCES NEEDED AND START-UP COSTS

Core Resources:
·Smartphone or digital camera – €200–€1,000 (many institutions already have access to one).
·Computer with internet access – existing or ~€300–€800 if new.
·Tripod and basic lighting equipment – €50–€200 (optional but helpful).
·Free digital documentation forms and platforms – provided by RETOLD.
·Open-source or browser-based tools for uploading and managing content – free.
·Optional 3D photogrammetry software (e.g., Meshroom, Metashape) – free or ~€100–€300 for licenses.

Estimated Start-up Cost:
·€500–€2,000 for a small institution (assuming minimal equipment purchase).
·Training time or workshops may require additional investment, particularly in initial phases.

POSSIBLE LOW-COST SOLUTION

A budget-friendly version of the RETOLD methodology can be implemented as follows:
·Use existing smartphones or tablets to capture photos and videos of crafts and buildings.
·Replace 3D models with high-resolution photo series or basic 360° imagery created with free mobile apps.
·Use free digital forms (e.g., Google Forms or downloadable RETOLD templates) for structured documentation.
·Upload content to free or low-cost platforms like Google Drive, Wikimedia Commons, or Sketchfab for public access.
·Collaborate with local schools, volunteers, or students for documentation, narration, and interviews.
·Organize community days to crowdsource oral histories and local expertise.

Estimated Low-Cost Implementation:
·Around €200–€500, primarily for printing materials, modest equipment (if needed), and volunteer support.
This solution retains the RETOLD project's core goals—preserving cultural knowledge, building digital skills, and improving access—while remaining feasible for grassroots organizations and small museums.

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