

# Digital Valorization of Cultural Memories: Three Case Studies in the Emilia-Romagna Region

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## *1. Introduction*

Through its cultural heritage (CH), a society represents itself. What makes the enhancement and acknowledgment of the cultural identity of a community complex is its mobility. It is no longer a matter of the static legacy of the past to be preserved, but rather its interpretation of today's values and its recognition (Assmann and Czaplicka 1995, 133). The fundamental role of CH as an element of social and sustainable promotion was identified by the Faro convention in 2004 (Montella 2016, 15). CH manifests the community's memory, so its enhancement is necessary for conscious preservation of the heritage itself.

In recent times, digital storytelling has significantly affected the enjoyment of CH content in culturally conservative contexts, changing the spaces and times of fruition by combining more traditional storytelling with digital tools such as information and communications technologies (ICT) (Brouillard, Loucopoulos, and Dierickx 2015, 9). However, digital has yet to be seen as preferable to more traditional means. It helps shape an integrated multilevel communication by facilitating CH access to a wider public and allowing the narration of all heritage layers that would not be available with traditional exhibition (Mandarano 2019, 8).

This article highlights some of the different technical potentials that ICT give rise to. The goal is to study and experiment with various communication channels. For each case study, the methodology outlined in this article considers: its identity enhancement and the bond between heritage and the target communities, the sustainability of the technologies, and the engagement level. Storytelling is used to create awareness among the community and a major sense of belonging to the museums.

The three case studies presented are projects implemented within the FrameLAB – Multimedia & Digital Storytelling research facility of the University of Bologna concerning three different realities with a heritage difficult to communicate and in need of enhancement. The following will

present the realities, their needs, and the applications of digital technologies to communicate CH in traditional and nontraditional museum environments in an effective way.

## 2. *Materials*

### 2.1. Case Study 1

The Darsena district of Ravenna, located near the historic centre, has always played a marginal role compared to the rest of the city, being perceived as “dirty” and “other” in contrast to the city’s historical Byzantine identity. In the 1970s, the realization of a new port led to the abandonment of the Darsena, leaving many buildings unused and underlining a lack of planning in the design of spaces after their abandonment (Biscioni 2005, 133). Then, since the 2000s, numerous communities of foreign immigrants have begun to establish themselves in the district, creating a highly intercultural climate. The current buildings in the Darsena, many of which are abandoned, represent a precious heritage of industrial archeology and contemporary history in danger of not being known.

The municipality launched several initiatives to regenerate the neighborhood. One of these is the DARE-UIA project (Digital Environment for collaborative Alliances to Regenerate urban Ecosystems in middle-sized cities),<sup>1</sup> funded by UIA (Urban Innovative Actions)<sup>2</sup> to promote regeneration through digital tools. This initiative proposes an integrated approach: It involves citizens as true prosumers to disseminate accessible and valuable data about the district, spread information on future changes, and generate an archive of the neighbourhood’s memory (Iannucci and Cardoni 2023).

### 2.2. Case Study 2

The National Museum of the Neoclassical Age in Romagna is located in the historic building of Palazzo Milzetti in Faenza. The palace can be

<sup>1</sup> The DARE project won the Fourth European Urban Innovative Actions call, UIA, (<https://uia-initiative.eu/en/uia-cities/ravenna>), proposes a collaboration strategy between public, private and non-profit sectors for urban regeneration in medium-sized cities. For an overview of the project see the portal <https://www.darsenaravenna.it/>, one of the outputs of the project.

<sup>2</sup> The European Union initiative called Urban Innovative Actions was born in 2014 with the aim of providing urban areas across Europe with the resources to test innovative solutions in order to address the main challenges linked to urban areas: employment, migration, demographics, water quality and pollution. For further information on the UIA initiative, please refer to the website <https://uia-initiative.eu/en>.

described as a political and military manifesto of Count Francesco Milzetti, who renovated it at the turn of the 1800s. The museum consists of two levels: the count's bachelor's apartment, the kitchens, and the garden on the ground floor, and a more formal apartment on the floor above. The décor of each room displays episodes from Greek mythology rich in Masonic symbolism and traceable to different stages of Milzetti's military and political career (Ottani Cavina 1999).

The museum's heritage, consisting of its richly decorated rooms, was poorly enhanced by impersonal, aseptic, and incomplete audio guides accessed by QR-codes that did little to attract the visiting public. Further, the written information to support the visit consisted of huge panels written in small print containing too much information that made for dull, unengaging, and inaccessible reading.

### 2.3. Case Study 3

The National Museum of Ravenna was created by the will of Enrico Pazzi in the 1880s and then located within the UNESCO-listed Benedictine complex of San Vitale (Novara 2014, 27). The itinerary is divided by the two floors of the complex. On the ground floor, the lapidary collection is displayed in the spaces of the two cloisters. On the main floor, various collections are displayed (including bronzes, ivories, weapons, and icons) as well as an exhibition of the art of Romagna (Ranaldi 2014). After coming under the control of the Superintendence of Ravenna in the 1960s, the museum's layout did not undergo any major changes.

In general, the collections and artifacts were made available in a complex museum system. The only information usable by the visitor consisted of a few limited sheets scattered along the museum itinerary bearing technical and strictly academic information, making the visit unattractive.

## 3. *Methods and Results*

### 3.1. Case Study 1

A living archive was created in which many historical, social, and cultural aspects of the dock are digitized and preserved as a Storymap<sup>3</sup> (Cardoni, Fabbri, and Iannucci 2022) and subsequently made accessible to the

<sup>3</sup> Storymaps are digital presentations of multimedia files, originally sharing maps and subsequently enriched with textual and audiovisual material that is easy to interact with and use. These tools are available with the software ESRI ArcGis. <https://www.darsenaravenna.it/home-tematica-scopri/storymap-folder>

public through an open-air museum in the neighborhood. The Darsena Living Archive<sup>4</sup> explains the recent industrial history of the Darsena of Ravenna. The living archive is made up of varied sources and research resources, including historical information on the evolution of the dock, audiovisual material from institutional and amateurs' channels, and artistic performances.

GIS technology has been used for the creation of georeferenced story-maps to narrate different aspects of the dock, enhance its explanatory function, and tell the lives of the community moving from individual to collective data (Cardoni, Fabbri, and Iannucci 2022). In addition, 3D models and QR codes have been used for storymaps' dissemination in an open-air museum: Its path consists of a widespread itinerary with QR codes and an interactive installation offering a neighborhood reconstruction in three dimensions (Figure 1, A).

Figure 1. Images related to the case studies



(A) Interactive map of the Darsena district (case study 1).

(B) QR code with audio narration (case study 2).

(C) View of the virtual tour (case study 3).

### 3.2. Case Study 2

The project was developed through the interaction of different types of communication, all aimed at creating a new, enhanced, and accessible museum itinerary. After an initial phase of art-historical research helpful

<sup>4</sup> Living archives represent a marriage between archival functions and performative practices, recording and tracing the past with contemporary creative practice. They can be considered places of collective memory as they align different temporalities to bring participants and texts that mediate memory into a shared and co-localized space. (Cardoni, Fabbri and Iannucci 2022).

for content development, the next step was to design the multimedia tools that would contain them, arriving at three different interactive and narrating elements that visitors can interface with:

1. An introductory video with the museum director's welcome and Italian Sign Language (LIS) translation, giving a brief introduction to the history of the building.
2. A narration in the form of audio, texts, or LIS translation videos, with the narrating voices of the two main characters accessible by QR codes (Figure 1, B).
3. A 55" touch screen makes it possible to explore the individual scenes in the main decorations depicting episodes and stories from ancient texts or mythologies. Through this interaction, it is possible to learn about the scene subjects, because one can observe the details of the decorations with high definition (not always possible because of the height of the ceilings).

### 3.3. Case Study 3

The project sought to improve the understanding of collections and the transmission of their memory through digital-heritage technologies. The first objective was to digitize a sample of the collection, so three-dimensional models of artifacts were acquired and post-processed using structured light scanners and related software (Artec). For the 3D creation of the Porta Aurea, using the modeling software Blender and referring to Palladio's surveys (Ranaldi 2015, 49–51), it was possible to display an image that reconstructed the original structure of the gate. Finally, the Web platform SketchFab was used as a digital repository for public enjoyment and monitoring of the 3D artifacts (Jacobs 2022).

The second phase was to integrate these models into the virtual visit: An interactive virtual tour (VT) was developed as an opportunity to intrigue and convince future visitors to go to the museum. The information apparatus that accompanies the objects of significant interest consists of cards placed along the tour with additional information (Figure 1, C), 3D models, and graphics showing possible versions of the artifacts that allow the visitor to recontextualize the artifact in its original contexts.

## 4. Discussion and Conclusions

Each project adheres to a shared methodology focused on delivering content to diverse audiences in an accessible manner, steering clear of specialized formats that might deter those without expertise in the field

and elevating the level of interaction. A strong use of storytelling is involved in all three projects to deliver engaging content that can create a bond among the visitor, the museum, and the heritage. Furthermore, all the technologies were chosen for their sustainability over time and ease of update in the face of the obsolescence of hardware and software. These technologies made it possible to valorize very different and complicated contexts functionally for distinct needs:

1. For the DARE-UIA project of the Darsena in Ravenna, the valorization of nontraditional, community-based heritage. The new narrative of the Darsena heritage, thanks to 3D reconstructions, provides a fresh perspective of the district and promotes greater awareness among the citizens as well as new urban and tourist itineraries. The district storytelling starts from the voices of people who lived there, helping to transmit the sense of community of Darsena.
2. For the National Museum of the Neoclassical Age in Romagna, the creation of an accessible and emotionally engaging narrative that enhances a context difficult to enjoy, given by means of a narration by the Count himself.
3. For the National Museum of Ravenna, ICT has made it possible to innovate by portraying the heritage virtually, offering a unique way to interact with assets, especially where the physical layout cannot be modified. The assets are narrated with drawings, reconstructions, and stimulating information, allowing a different and engaging enjoyment of the heritage.

This article highlights how the interaction of different disciplines, skills, and technologies has contributed to the development of contemporary museum experiences that are accessible and transferable to other similar contexts. We have presented three case studies that confirm how ICT are essential for the digitization, conservation, and valorization of heritage, as well as for the dissemination of cultural memory among the population.

For case study 1, the next step will be to create the interface of the interactive installation and test the museum path with a focus group to determine how the open-air environment can be merged with the museum space. For case study 2, work is currently underway to optimize the interactive touch tour with a new interface to offer an interactive and exciting visitor experience. Finally, the virtual tour of case study 3 is now being revised, and once it is optimized, we will develop content to be used during the museum tour to make it more interactive and engaging. In addition, evaluations of the

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results will be carried out for each case study using feedback tools to assess the effectiveness of the developed methodology.

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