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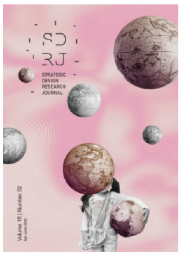

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Participatory flows. A comparative analysis of co-design processes in the field of cultural heritage

Alessandra Bosco [a] | Silvia Gasparotto [b *] | Margo Lengua [c]

[a] IUAV University of Venice, Department of Architecture and Arts: Venice, Italy.
[b] University of the Republic of San Marino, Department of Economics, Science and Law: San Marino, Republic of San Marino.
[c] University of the Republic of San Marino, Department of Economics, Science and Law: San Marino, Republic of San Marino.
* Corresponding author: silvia.gasparotto@unirsm.sm

ABSTRACT

This paper intends to explore co-design processes in the field of cultural heritage, based on an examination of the scientific literature and a comparative analysis of case studies. These cases, which involve different interlocutors, contexts of application, tools and output, are expressed not only in a discursive manner, but also represented in diagrams and visual syntheses of the co-design processes. The analysis was conducted on the basis of shared parameters: project description, year, partners, goals, context, co-design process, stakeholders and output. Starting with a consideration of the key concepts that emerged in the processes under investigation, the paper moves on to present the "MEET – Multifaceted Experiences for Enhancing Territories" project, which relies on the tools of design to enhance elements of the local culture and involve the community. It concludes by identifying good practices and the potential of co-design processes applied to the field of cultural heritage.

Keywords: Co-design Models, Cultural Heritage, Museum, Design Process, Engagement.

INTRODUCTION

To interpret its own time, the museum, recognized by the scientific community as a cultural hub (Cirifino et al., 2011; Brulon Soares, 2020), must respond to the many political and social challenges that have emerged in the twenty-first century, promoting sustainability, equity and social justice. There is currently a heated debate on these themes that involves reconsidering the very definition of museum, promoted as a necessary step as early as 2017 by the Executive Board of ICOM, the International Council of Museums (Sandahl, 2019). Despite the different points of view on this issue, many museums have already integrated the activities deemed to be primary museum functions, as listed in the definition approved by the General Assembly of Vienna in 2007 – research, acquisition, conservation, communication, exhibition, education and entertainment (ICOM, 2017) –, with specific research and design practices that can reflect upon and address the new social and political challenges considered to be emerging (Advisory Council of ICOM, 2022).

A significant step forward towards visitor inclusion was fostered by the spread of digital technology that enabled a different and greater degree of participation, which in its most

evolved form, allowed people to engage with customisable interactive exhibition experiences (Din & Hecht, 2007; Parry, 2013).

The study of better and more agile visitor accessibility, the use of languages suited for different targets, the development of forms of storytelling, the ideation of educational services and spaces, the projects to include new audiences, the promotion of the tangible and intangible cultural heritage as testimony to the identifying values of a community, the engagement of new communities, are just some of the projects and activities that the museum is developing to promote a closer relationship with its audience (Basballe & Halskov, 2012). The visitor is immersed in a space in which the relation between the physical and virtual dimensions is growing tighter, transformed from mere spectator to user who can interact with the content and values of the heritage preserved in the museum (Villeneuve, 2013; Lupo, 2021)

As Simon sustains in his preface to "Participatory Museum", the cultural institution can be "a place where visitors can create, share and connect with each other around content" (2010, ii). Designers, along with Cultural Heritage Professionals, play a key role in the process of transforming the relationship between the user and the museum, working towards a greater, more conscious and customised participation and on projects that can involve the visitor, student, citizen or expert, in co-designing and co-creating the content on display, or the visitor experience (Bosco & Gasparotto, 2021; Not & Petrelli, 2019; King et. al., 2016).

The evolution of the process of engagement towards a deeper inclusion is also supported by the change in the approach of Cultural Heritage Professionals, and by the introduction of bottom-up practices. Design-for-participation projects that work on innovating the visitor experience, rethinking the content and the ways to engage with the heritage and the spaces in reference to specific targets, are surpassed by participatory design projects that rely on horizontal dynamics to rethink the design of the content and experience of the heritage.

One of the ideal contexts in which to experiment with participative and collaborative processes that focus specifically on the inclusion of new audiences, and on involving the younger generations in particular, is school. The school environment, oriented towards instruction and cultural education, is by its very nature a community built on multiple direct and indirect relationships, and thus appears as an excellent partner in research programmes finalised towards the enhancement of the cultural heritage. The scientific community may find in this context a field of application and experimentation for new design-driven practices, as well as an environment in which to validate theoretical research by means of user research tools such as questionnaires, interviews, probes, etc. (Penuel et al., 2007; Roschelle, 2006; Soloway et al., 1994) School, on the other hand, in this situation can rise to the challenge of unconventional but more engaging learning experiences, relying on the attraction and diffusion of digital tools (Carr, 1997).

1. THE ROLE OF CO-DESIGN PROCESS IN THE ENHANCEMENT OF CULTURAL HERITAGE

Participative practices for the enhancement of the cultural heritage arose from the desire for "connection with people otherwise framed as 'audiences'" (Graham, 2019, p.80). In a wider sense, to codesign means to involve a multiplicity of diverse possible interlocutors in every phase of the design process to define and develop a project (Sanders & Stappers, 2008; Rizzo, 2009). As Sanders & Stappers (2008) sustain, the value of the collaboration, apart from the possible economic benefits, is manifested in the experience itself – because it enriches the

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project and the participants thanks to multidisciplinary notions – and at the social level, creates cohesion and sharing.

In the Cultural Heritage field, which is the focus of the research presented in this paper, the earliest experiences of this type may be found in the scientific literature starting in the early 1990s (Broadbent & Marti, 1997), intensifying in the years that follow. These processes, which derive from Human Factor studies (Bannon, 1991) and from the Scandinavian tradition of participative design (Ehn, 1993), were initially adopted to make the user experience more inclusive, seeking to meet the needs, motivations and expectations of the visitors. The engagement, in these cases, consists both in considering people's needs, and in relying on co-design processes that directly involve the visitors, the museum staff, curators, independent experts or other possible stakeholders.

A collaborative approach can help to enhance the heritage by casting light on the identity of the place by communicating its customs, traditions and knowledge. Basing the project on the thoughts and reflections of the citizens and visitors draws them closer to the history and culture of the place, and at the same time contributes to the creation and consolidation of a network for promotion and mutual learning.

Each project has its own specificities – that might be determined for example by the tools, the goals, the parties involved, the economies or the type of expected output – that lead to the choice of different methodologies and process flows (Avram et al., 2020).

Various authors have proposed specific collaborative models within the research field considered by this paper. Dindler's model (2010) works on involving children in co-design workshops to improve accessibility and inclusivity in the context of museums. Taxen's model (2004) on the other hand proposes a 4-session participative process in which high-school students and museum educators join to rethink the experience of visiting a museum.

Expanding the co-design process to include stakeholders of different ages and different professional backgrounds, Avram et al. (2019), in a four-year research programme, seek to enhance the conserved heritage through the use of interactive smart objects, and Bosco and Gasparotto (2021) consider motivating the museum staff by involving them in activities that expand their skills.

The co-design process, a tool that can promote inclusion and at the same time enhance the tangible and intangible heritage, contextualised within a contemporary condition distinguished by a hybrid physical and digital dimension, is the object of investigation of this paper.

2. METHODOLOGY

This comparative analysis is founded on the investigation of research programmes that originated in university contexts, and have developed and validated theories, methodologies and processes to work with in the field of cultural heritage.

Starting from an analysis of the scientific literature, we examined 62 papers published between 2002 and 2021, found in databases such as: Google Scholar, Scopus and DOAJ. In most of them, co-design processes are expressed mainly through a description of the activities that took place and the publication of photographs and images. Each one different in terms of year, actors involved, contexts of application, choice of tools and expected outputs, the projects were filtered using key words that could support a critical reading aimed at identifying and

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clearly outlining the potential of co-design processes applied to the cultural heritage field at different times. The study led to a selection of:

- Projects represented by means of a visual synthesis that provides an immediate understanding of the complexity of the phases, activities and results.
- Projects in which the co-design processes are tested in real contexts.
- Projects that aim for an output in which technology is an essential element to activate socially and politically significant dynamics.
- Projects closely correlated with a community capable of repeating the experience.

Based on these criteria we explored three research programmes each of which was representative of a different moment in time in terms of the typology of investigation, the use of technology, the generated output. The data relative to the projects – description of the project, year, partners, goals, context, co-design process, stakeholders, output – is presented in Table 1 and investigated in the comparative analysis developed in the discussion. The project format for MEET – Multifaceted Experiences for Enhancing Territories project format, presented by the research unit in Design for Heritage and Cultures of the Università degli Studi della Repubblica di San Marino and described in paragraph 6, satisfies the above-mentioned filters and is presented on the basis of the same criteria. The investigation concludes by identifying and arguing key concepts that can express the good practices that emerged from the study of the processes to which future designers, committed to the field of cultural heritage, can refer now and in the future.

Table 1. Synthesis of the comparative analysis of four research projects

PROJECT	Co-designing Collaborative Museums using Ethnography and Co-creation Workshops	MESH - Material EncounterS with the digital Cultural Heritage	GIFT - Meaningful Personalization of Hybrid Virtual Museum Experiences Through Gifting and Appropriation (Action Research Module ARM)	MEET - Multifaceted Experiences for Enhancing Territories
YEAR	2011	From 2013 to 2017	From 2017 to 2019	2021 - ongoing
PARTNER	Computer Science Department of the Pontifical Catholic University of Rio de Janeiro (PUC-Rio), Brazilian Planetarium and Science Museum.	Sheffield Hallam University, University of Limerick (Ireland), Waag Society (WAAG) (NL), University of Amsterdam / Allard Pierson Museum (UoA-APM) (NL, Archeologico), Museon (NL), Museo Storico Italiano della Guerra (IT), Fondazione Bruno Kessler (FBK), University of Strathclyde (UoS) Glasgow, eCTRL Solutions (ECTRL), The Digitaal Erfgoed Nederland Foundation (DEN), The University of Stuttgart (USTUTT), University Carlos III Madrid (UC3M).	MAD: Media Art & Design of IT University of Copenhagen (ITU) and facilitators of Culture24 (C24). ARKEN Museum of Modern Art, CAOS Centro Arti Opificio Siri, Center for Studies of the Holocaust and Religious Minorities, Danish Museum of Science & Technology, Derby Silk Mill, The Munch Museum, Royal Albert Memorial Museum & Art Gallery, Royal Pavilion & Museums, Brighton Museum, San Francisco Museum of Modern Art, Tyne & Wear Archives & Museums.	University of San Marino - Research group: “Design for Heritage and Cultures”.
GOAL	Use of a human-centred participatory approach for the design of collaborative museums, supported by cross reality group technologies.	Design tools that help heritage professionals create interactive and digital experiences on their own without technical knowledge.	Help museums create hybrid experiences: Experiences that combine the physical and digital to create personal encounters with cultural heritage.	Enhance the cultural heritage of a specific territory through the active participation of the stakeholders of the territory.
CONTEXT	Museum.	Museums and places of cultural memory.	Museum.	Museums; schools; cultural centres; sport centres; libraries; archives; public spaces; theatres.

CO-DESIGN	Ethnographic research, one co-creation workshop and prototyping methods (Blank Model Prototyping).	Collocated intensive co-design events.	Five/two-day workshops.	Co-design Workshops.
STAKEHOLDERS	Museums; museum professionals; museum visitors; researchers; children; teenagers; teachers; designers; architects; marketing specialists; computer scientists; astronomers.	Designers; cultural heritage professionals; researchers; social scientists; technologists.	Artists, designers, museum professionals; researchers; industries.	Teachers; students; designers; professionals; makers; volunteers; associations; foundations; citizens; tourists; municipalities; regions; states; researchers; museums; theatres; institutions; sports clubs; cultural and creative industries; businesses; libraries; cultural spaces.
OUTPUT	Ideas and prototypes to support mixed presence collaboration and social interaction in the context of a Brazilian Planetarium and Science Museum.	Several prototypes, a software platform and a toolkit for cultural heritage professionals to implement interactive interventions for the enhancement of the cultural heritage.	Design & Planning Tools.	Interactive installations developed through the cultural contents chosen during the co-design workshops.

3. A COMPARATIVE ANALYSIS OF THREE CASE STUDIES OF CO-DESIGN PROCESS IN THE CULTURAL HERITAGE FIELD

The case studies investigated here represent three typologies of approach to co-design in the cultural heritage field, applied in the context of museums at different times.

3.1. Co-designing Collaborative Museums using Ethnography and Co-creation Workshops

The first study in 2011 (Moura et al., 2011) was developed by a group of researchers in the Computer Science Department of the Pontifical Catholic University of Rio de Janeiro. The research study adopted a human-centred and participatory approach to design and applied ethnographic methodologies and processes of co-creation and prototyping "for the design of collaborative museums, supported by cross reality group technologies" (Moura et al., 2011, p. 154).

The project, applied to the sole context of the Planetarium and Science Museum of Rio de Janeiro, primarily involved the visitors, and featured the collaboration of the museum staff and coordination by the researchers of the University of Rio de Janeiro. The programme included ethnographic research, co-creation process and prototyping. Ethnographic analysis was used to map the user profiles, the limits and potential of the museum context. Based on these results, co-design workshops and Blank Model Prototyping sessions were conducted, leading to the ideation of many physical and social prototypes that could enhance the heritage, and support collaboration and social interaction within the museum. Figure 1 represents the circular, reiterable process in a visual synthesis that highlights the phases and the tools that were used. The diagram adopts the standard known as the Business Process Modeling Notation (BPMN), a flow chart that models business processes.

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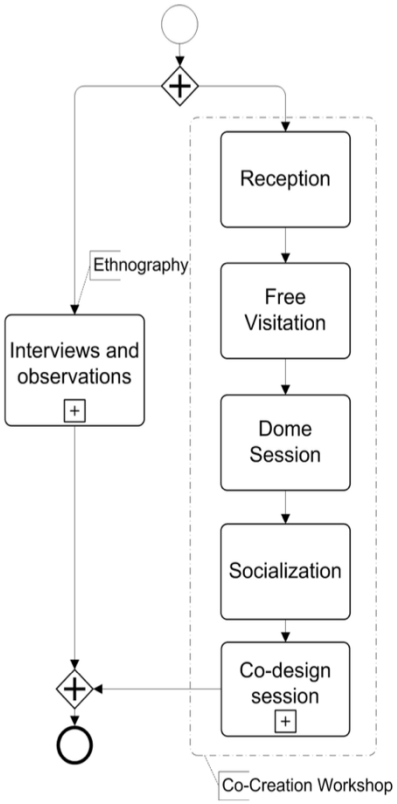

Figure 1. Research macro-process in BPM notation (Moura et al., 2011).

3.2. MeSch - Material EncounterS with digital Cultural Heritage

MeSch is a research project funded by the European Community's Seventh Framework Programme 'ICT for access to cultural resources'. This is a project that applied co-design processes in museum contexts at a large scale. The project, which began in 2013 and ended in 2017, involved twelve partners from six European countries and was coordinated by the Art Design and Media Research Centre (ADMRC) of Sheffield Hallam University (UK). The goal of meSch was to use co-design practices to design and develop tools for the creation of tangible digital and interactive experiences for the enjoyment of the cultural heritage. The project later included the creation of a software platform and a toolkit of smart tools that could support cultural heritage professionals in the autonomous development of smart objects for the

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enhancement of the heritage, which would not require particular technical skills (Not & Petrelli, 2019).

Various co-design processes were applied throughout the project (Avram et al., 2020), involving the partners and cultural heritage professionals who contributed fully to the development of the smart objects, the platform and the toolkits. The co-design workshops were also tested in three applications lasting approximately six months each: at the Museon (Petrelli et al., 2016a), the Allard Pierson Museum (Damala et al., 2016) and the Museo Storico Italiano della Guerra (Petrelli et al., 2016b) where interactive exhibitions were designed, developed and opened to the public. Figure 2 visually represents the co-design process. The respective phases and actions took place within different timeframes, which were not however explicitly defined. The colour of the arrows makes it possible to instantly understand the relations between the phases.

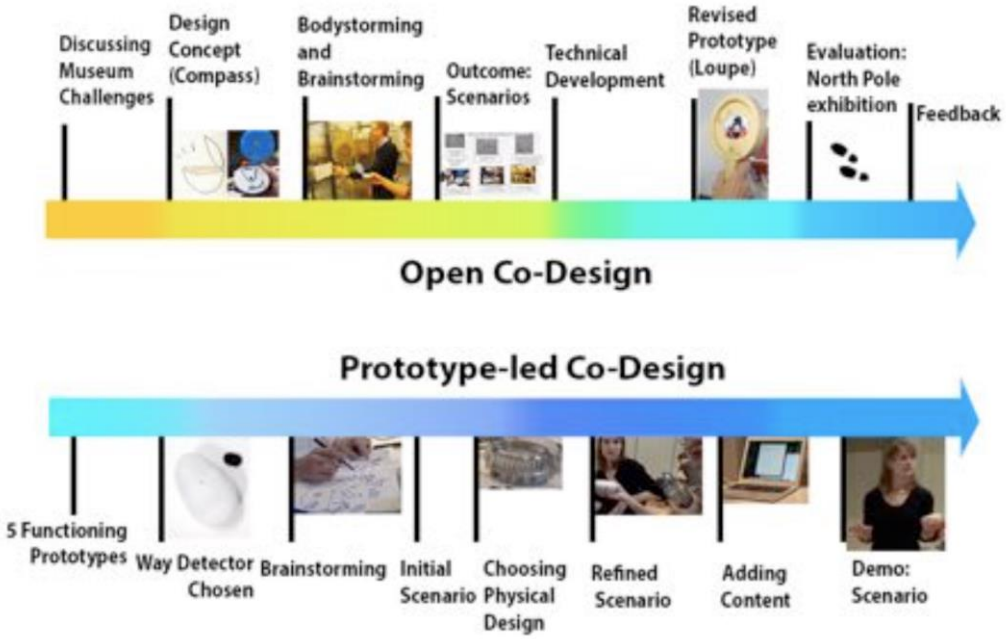

Figure 2. Overview of the two co-design processes (Ciolfi et al., 2016).

3.3. GIFT - Meaningful Personalization of Hybrid Virtual Museum Experiences Through Gifting and Appropriation

GIFT is a research project funded by the EU's Horizon 2020 coordinated by the research team MAD: Media Art & Design of the IT University in Copenhagen. It was founded with the goal of developing a series of open-source tools and working methodologies that would help museums offer hybrid experiences by designing digital technologies that mediate the physical visit (Back et al., 2018). The project, which began in 2017 and ended in 2019, combines human-computer interaction research, artist-led exploration, experience design and technology explorations, in collaboration with various museums. More specifically, the Action Research Module (ARM) is a participative research-action process consisting in five 2-day workshops (Løvlie et al., 2019). Managed by the IT University of Copenhagen and by the facilitators of Culture24, it actively involved professionals from 10 museum institutions in the EU and the United States for 18 months. During the meetings, the museum professionals assessed and generated a series of recommendations and two design, planning and assessment tools for the development of digital experiences (Mortensen et al., 2018). Figure 3 is an effective visual synthesis of the phases of the process. Between the workshops, the

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professionals involved conducted actions within their own museums. All the actions are described in specific texts. The pattern includes one last box marked “Next?” which posits a possible continuation of the process.

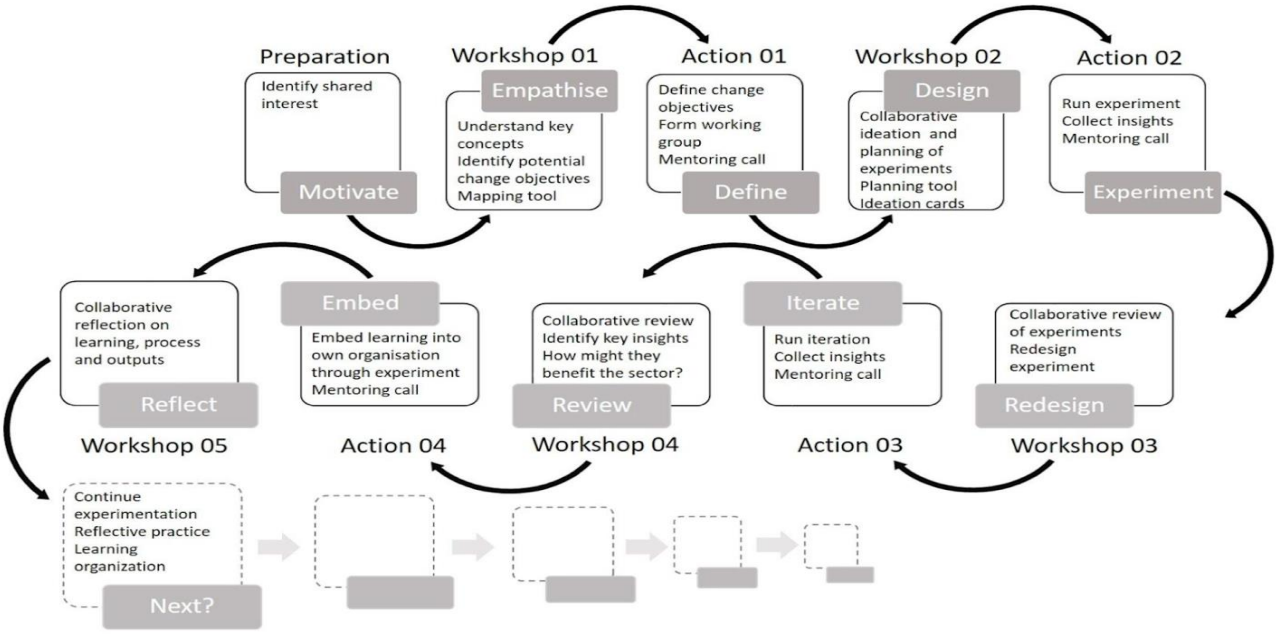

Figure. 3 Model of the action research process as it unfolded in GIFT (Mortensen et al., 2018).

4. DISCUSSION

4.1. Goals and application contexts

The projects under examination, coordinated by university research centres, all create multidisciplinary networks and include a variety of stakeholders.

Oriented towards the enhancement of the cultural heritage and aimed at supporting innovation and technological development through the use of the digital, the projects, while working on expanding inclusion by improving the visitor experience and audience engagement, each have specific characteristics in terms of the process they adopt and the output they produce.

The project developed by the University in Brazil, finalised towards visitor engagement, works on implementing a system that relies on groupware, socialware and cross technologies (RX) to support and integrate the visitor experience – before, during and after – making the museum space, the exhibitions, the artefacts and the collaborative services more exciting and stimulating. The project, directly correlated with the local community, promotes education in the themes of the museum and experimenting with new technology. Applied to the “Planetarium and Science Museum of Rio de Janeiro”, it proposes an explorative approach that includes a process of ethnographic research and analysis and the experience of a co-design and co-creation workshop.

The aim of MeSch is to enhance the experience of the cultural heritage through the co-design of smart objects and spaces that bring the physical dimension of the museum heritage together with the digital dimension, to make the visit more engaging. The Project, which involved a network of Designers, Cultural Heritage Professionals, Researchers, Social Scientists and Technologists in each of its phases, finds its specific disciplinary focus in interaction design. The Cultural Heritage Professionals play a key role in this process. They share their in-depth

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knowledge of the heritage and participate in the design, contributing to the development of the content while at the same time developing attitudes in the digital practices of enhancement. Applied in diverse museums and sites of memory, MeSch is not founded in the regional context, but in the conserved heritage.

The GIFT project focuses specifically on the practices of service and interaction design and orients its research towards the development of digital tools aimed on the one hand at making the approach to the museum and the visitor experience more intimate and engaging, and on the other at proposing collaborative working methodologies for the museum professionals. The project gathered a network of internationally renowned artists, designers, museum professionals and researchers and was applied in international museum contexts independently of the heritage they conserved and of the regional context.

4.2. Co-design Processes - Stakeholders and Output

In all three cases taken into consideration, the co-design processes, which were part of larger projects, served as catalysts for networks finalised towards the practices of enhancement.

The co-design workshop proposed by the project from the University of Rio de Janeiro involves researchers, children, adolescents, teachers, designers, architects, marketing specialists, computer scientists and astronomers to produce ideas that will be re-elaborated and in part prototyped in subsequent co-creation workshops. The participants in the co-creation workshop that uses Blank Model Prototyping, are some of those involved in the earlier phase, joined by architects, computer scientists and designers. This second workshop prototypes new technological solutions – both hardware and software, physical artefacts, interfaces or services – the purpose of which is to support collaboration and social interaction within the museum.

The co-design workshops organized within the meSch project involved researchers and professionals from the Universities, Museums, Foundations and partner businesses in establishing the content and developing the technology and the toolkit. During the 4 years of the project, the co-design workshops led to the definition of interactive installation typologies, methods of fruition, models of smart objects and the relative technologies, later used to develop the projects obtainable on the platform. The co-design workshops, the aim of which was to develop and build a specific smart object based on a given prototype, alternated with activities in which the stakeholders dealt with an open brief (Ciolfi et al., 2016). The outcomes of the co-design workshops therefore include the prototyping of smart objects that can communicate the co-designed content, and the development of interactive exhibitions designed to enhance and interpret the existing museum collections.

The co-design workshops organized within the Action Research Module (ARM) of the GIFT project involved the researchers of Media Art & Design (MAD) at the IT University in Copenhagen, the facilitators of Culture24 and 10 museums – three art museums, four cultural history museums and three museums with mixed collections – in Europe and America. The five workshops, each two days long, took place over the span of 18 months, giving the museum professionals involved the opportunity to experiment and to assess the recommendations and the co-designed design and planning tools inside their own museums. The result of the co-design sessions was the development of open source paper-based tools, such as the ASAP map – As Soon As Possible Map – and the Experiment Planner, published online. These tools, made to support and facilitate collaborative thinking, were intended for innovators working in the

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field of cultural heritage, and more specifically in contexts of digital transformation and enhancement in museums. The Recommendations are yet another highly significant result: they concentrate on practical challenges in the design of digital visitor experiences and on other organizational challenges that museums regularly face.

4.3. MEET - MULTIFACETED EXPERIENCES FOR ENHANCING TERRITORIES

Like the cases analysed above, the MEET – Multifaceted Experiences for Enhancing Territories project was coordinated by a university research team, and centred on the creation of a network of different interlocutors and the development of a co-design process finalised towards the enhancement of the tangible and intangible cultural heritage specific to a territory, while also supporting education in the digital field (Gasparotto et al., 2021).

The project was established in 2021 by the research unit Design for Heritage and Cultures of the Università degli Studi della Repubblica di San Marino.

Research into co-design practices that could produce a real impact on the territory, reflections upon the new goal of a museum oriented towards the inclusion of a wider public, the involvement of citizens in the enhancement of the local heritage outside of traditional museum contexts, combined with the desire to contribute to scientific research, led to the definition of the framework illustrated in Figure 4.

MEET is a collaborative design format that can be applied to different focuses, and that brings interrelates different disciplinary fields such as: cultural and museum studies, storytelling, education, exhibit design, interaction design.

Structured as a sequence of phases that involve a network of institutions, professionals and citizens, its purpose is to define and gather content to convey to the public. The project's output is an interactive exhibition, based on open-source platforms and technologies, that includes three types of installation: an interactive map, an interactive table and a projection of full-scale historical figures, that can narrate and detail a theme and how it relates to the territory. The themes considered to be of interest might be, for example, the re-evocation of an event, the study of a historical figure, the history of a building, a monument or an object that is perceived to be of particular value to the community.

The development of an interactive exhibition makes it possible to create a more engaging visitor experience, intended to include non-specialist audiences as well, who may also be inspired to visit the exhibition by the promotional efforts of the participants in the co-design process.

The use of open-source tools and the support of designers and experts during the various phases of the design process provide training for the participants, making it possible to replicate the experience. MEET may be consistently updated, reproduced or scaled, involving different stakeholders or expanding or modifying the content on display, using the same technological tools.

Figure 4 visually illustrates all the phases of the process. Beside the enumeration of each phase is the detail of the relative research work and data collection. The process is described in a series of boxes that identify the phase and explain the goals and actions. The frames directly correlated to the main boxes reflect the same organization. Finally, the highlighted yellow circles identify possible phases of further development.

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The project, coordinated by a university research centre, originated with an agreement between different partners and local institutions. The first phase consisted in identifying possible stakeholders and exhibition spaces. While the process may be applied to many contexts and different stakeholders, the chosen field of application in this paper, as an example, is the context of a school in which to experiment with non-conventional learning techniques, focusing on both the development of content regarding the heritage of a territory, and the use of technology.

In phase two, the identification and approval of a shared theme is followed by the organization of a series of co-design workshops, prevalently involving groups of students, and focused on defining specific content and points of view on the issue. In phase three, oriented towards the development of the design, a designer assists the students in elaborating their ideas. The students thus have the possibility to work on the interactive map, on the interactive table, and on the full-scale projection, developing the content and representing it in a series of prototypes.

Phase four, which entails developing and realising all the design elements, requires the collaboration of some of the stakeholders and the possible contribution of independent professionals, selected on the basis of their expertise. Fitting the installations in the exhibition spaces – phase five – anticipates the sixth and final phase, opening the exhibition to the public.

Along with the primary flow chart, the diagram also includes the collection phase for qualitative and quantitative data as well as the feedback from all the stakeholders involved, making it possible to monitor the entire experience and assess the impact of the research project. The framework was in fact developed with the goal of sharing it with the scientific community, in order to be able to monitor the application in different contexts and to read the data to verify applications, potential and critical issues.

Tested at the Oriani Library, in a pilot project on the subject of the relationship between Dante and the city of Ravenna, the format is currently being applied in Riccione, where it explores the relationship between archaeology, history and territory, and probes the figure of Maestro Luigi Ghirotti after whom the Museum of the Territory is named.

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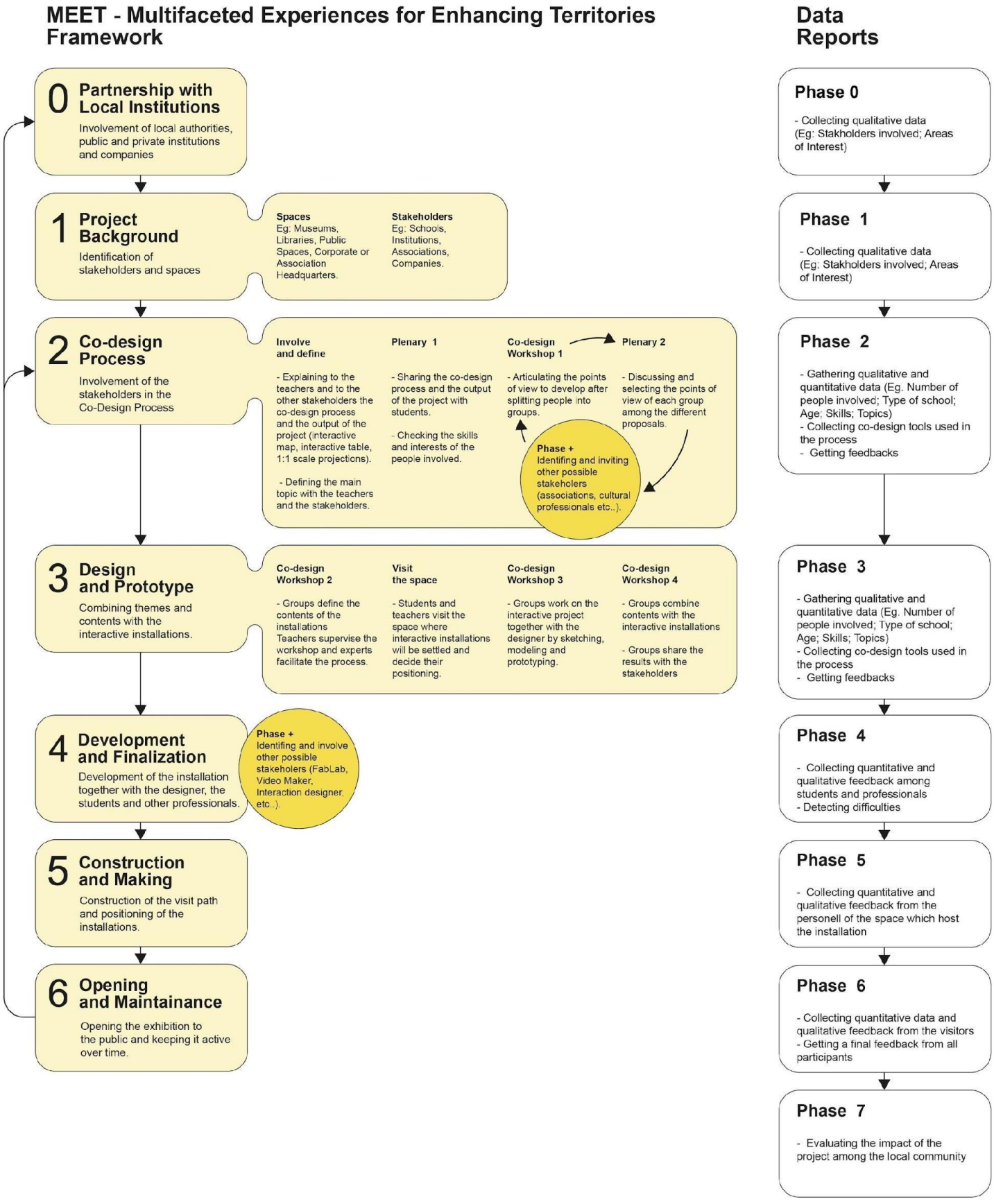

Figure 4. MEET - Multifaceted Experiences for Enhancing Territories.

5. CONCLUSION

The study of the literature, together with the analysis of the cases and the experience derived from the development of the project format, allowed the research team to identify the key concepts and potential of co-design processes applied to the field of the cultural heritage.

These are concepts and good practices that concern both the tools and the languages adopted and the goals and impact of the projects on the territories and on the stakeholders involved.

DESIGN > The practices of collaborative design make it possible to elaborate thoughts, represent ideas systematically and test their development in multiple prototypes that make the process concrete and trigger virtuous processes.

EDUCATION > The practices of collaborative design activate learning processes that affect everyone concerned. When students are involved, the co-design processes activate non-conventional but particularly effective educational processes, thanks to the attraction of the digital and technologies, and the different attitudes and skills brought into play, which are complementary to those carried forward in today's school curricula.

ENGAGEMENT > The practices of collaborative design together with the use of digital technologies, bring out and translate the ideas and desiderata of the people involved into usable content in interactive exhibition experiences, thereby activating participative dynamics.

INCLUSION > The practices of collaborative design make it possible to expand and integrate the curatorial content on display – including less often considered points of view that could attract new audiences – and question routine practices to enrich and widen the debate.

NETWORK > The practices of collaborative design together with the use of digital tools connect stakeholders from different disciplinary areas and stimulate them to collaborate and to combine their personal skills and attitudes to realise complex projects.

OPEN > The practices of collaborative design together with the use of digital tools and languages make the project more enduring because they allow it to be updated, modified and implemented, and as such make it more sustainable

TERRITORY > The practices of collaborative design if applied to themes of local interest involving the community can stimulate a greater sense of belonging in participants, thereby contributing to transform the museums into permanent laboratories for the enhancement of the territory.

Table 2. Representation of the relationship between the key words, the case studies and the MEET project

	NETWORK	INCLUSION	OPEN	EDUCATION	ENGAGEMENT	TERRITORY	DESIGN
CCMECW	✓	✓		✓		✓	
MESCH	✓	✓			✓		✓
GIFT	✓	✓			✓		✓
MEET	✓	✓	✓	✓	✓	✓	✓

In Table 2, the reflections explored here, represented by the key words, are placed in relation to the case studies and experimentation of the MEET project to provide a comprehensive synthesis, not oriented towards conveying a result but aimed at making a contribution to research in this field. The sharing of goals and processes, the scalability and adaptability of the projects, combined with the use of digital technologies and open-source tools, can in fact enable and activate virtuous processes for the enhancement of the cultural heritage, creating networks and involving stakeholders who can present the framework time and time again, customizing and improving it along the way. Collaborative models implemented in this

manner can allow smaller organizations to develop innovative projects, without the need for significant economic investments. The know-how that is acquired and the solid relationships that are generated become resources that can enrich and reinforce constantly evolving skills.

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Participatory flows. A comparative analysis of co-design processes in the field of cultural heritage

Alessandra Bosco [a] | **Silvia Gasparotto** [b*] | **Margo Lengua** [c]

[a] IUAV University of Venice, Department of Architecture and Arts: Venice, Italy.
[b] University of the Republic of San Marino, Department of Economics, Science and Law: San Marino, Republic of San Marino.
[c] University of the Republic of San Marino, Department of Economics, Science and Law: San Marino, Republic of San Marino.
* Corresponding author: silvia.gasparotto@unirsm.sm

Author Contribution

The paper is the result of a common reflection of the authors. Nevertheless, the introduction is written by Alessandra Bosco; chapter 1 "The role of co-design process in the enhancement of cultural heritage" by Silvia Gasparotto; Methodology together by Silvia Gasparotto and Alessandra Bosco; Chapter 3 "A comparative analysis of three case studies of co-design process in the cultural heritage field" by Alessandra Bosco and Margo Lengua; chapters 4 and 5 by the three author together, and the conclusion by Silvia Gasparotto and Alessandra Bosco.

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Alessandra Bosco 

Silvia Gasparotto 

Margo Lengua