Designrama

Bringing Culture to People: A Co-design Method for Redefining the Role of the Museum

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Abstract
ICOM (International Council of Museums) envisions a role for the museum as an accessible and inclusive institution open to the public, which operates professionally and with the participation of communities. This vision requires research and practice to be fully implemented. The paper illustrates the participatory ideation and evaluation of new museum services that are inclusive and accessible for people who cannot visit the museum due to disability and age-related impairments. It illustrates the co-design process carried out within the EU project BeauCoup, which aims to make the cultural heritage accessible beyond the museum's walls. This objective implies that the museum must play a key role in promoting inter-institutional partnerships between the cultural and the social sectors to engage marginalised communities. The paper describes the approach and the outcomes of the co-design process which involved various stakeholders and institutions, offering a reflection on the benefits and shortcomings of the approach.

Introduction

The research described in this article explores the changing role of museums in relation to the transformations affecting contemporary society, particularly with respect to ageing and accessibility. The inclusion of marginalised communities has become a key challenge for museums and therefore it is fundamental to rethink the functions of museums in an inclusive direction. To address this issue, the EU funded project BeauCoup has developed the concept of "bringing culture to people" to design innovative services targeted to older adults with disabilities outside cultural sites.

Various barriers exist for people with disabilities in accessing museums (Hayhoe, 2019), and even when museums are physically accessible, they may not have the necessary accommodations to ensure that visitors with disabilities can fully enjoy the exhibits (e.g., Braille and large print labels, audio description for people with visual impairments, museum staff adequately trained to welcome and assist people with ageing or disability issues).

The BeauCoup project brings together research institutions, museums, care institutions, and technology providers to co-design new services targeted to seniors and people with disabilities.

In the following, we first provide an overview on the practice of co-design in museums. Then we present our approach describing a museum service co-designed with representatives of cultural and social institutions from different European countries, which defines a role for the museum as a key enabler of collaborations among social and cultural institutions for the benefit of ageing people and people with disability.

Co-Design in Museums

In the last decades, an increasing number of research studies have involved people in the design of new products and services (Sanders & Stappers, 2014; Mygind et al., 2015; Ayala et al., 2020). The assumption is that people are "experts of their experience" and can collaborate in orienting solutions. This implies a key role of the designers as "facilitators" in scaffolding people's creativity (Sanders & Stappers, 2008).

Greenhalgh et al. (2016) identify four main types of co-design originating from diverse institutional settings: value co-creation (business and management), technology co-design (computer science), community-based participatory research (development studies), and experience-based co-design (museums, healthcare management). These approaches vary in guiding principles, goals, participants, and timescales. Co-design activities may also occur at different points along a continuum of engagement, ranging from mere consultation to full stakeholder involvement. They can focus on short-term/small-scale or long-term/large-scale endeavours. Despite these differences, common factors include a shared emphasis on systems, individual experience, and the significance of processes and relationships.

Notwithstanding the increase in co-design practices, recent literature reviews indicate that the engagement of people is still at low levels, and is often characterised by tokenistic participation (Majid, 2020).

The risk of tokenism in co-design methods refers to the potential danger of placing excessive emphasis on the tools used in the collaborative design process rather than prioritising the human-centred aspects of the methodology. This risk arises when the tools become the focal point, overshadowing the importance of meaningful engagement, shared understanding, and active participation among the diverse stakeholders involved in the co-design process. Instead of fostering genuine collaboration, "toolification" may lead to a superficial reliance on technologies, potentially hindering the depth of human interaction and creativity essential for successful co-design outcomes.

Other challenges of co-design practice with vulnerable groups regard the power dynamics between designers and participants (Farr, 2018), the need to integrate diverse and sometimes conflicting perspectives (Ciolfi et al., 2016), and the adaptation of existing design methods "that build on participants' interests, strengths, lived experiences and contexts" (Hodson et al., 2023; Maye & Claisse, 2023).

The scientific literature provides a variety of methods to support the co-design process, from general-purpose design toolkits like IDEO's Human-Centred Design Toolkit, and the Systemic Design Toolkit by the Systemic Design Association, just to name a few, to methods tailored to the cultural sector (Bosco et al., 2022). For example, Garcia Carrizosa et al. (2019) developed a handbook for co-designing participatory accessible museums involving people with disabilities, with relevant suggestions to engage people with different needs to take a role in co-design activities.

The BeauCoup project faces the challenge of imagining a new role for the museum that can extend its services beyond the museum's walls, collaborating with institutions in the cultural and social sector that care for older people or people with disabilities.

To address this challenge, the project involved museum experts (curators, managers, educators), public institutions (municipalities, provinces), associations that deal with seniors and people with disabilities including their caregivers, technology providers and designers, in five European countries.

Given the variety of stakeholders involved in the project, rather than designing a toolkit that could accommodate everyone's skills, interests, and availability, we developed a co-design process structured around a series of incremental and iterative workshops, in which various facilitation tools were used, from simple objects of inspiration (photographs, cards, narratives) to more complex mapping tools such as service blueprints. These tools were used to gather insights into people's needs and expectations, and to share the idea of museum services that can be provided outside the museum.

In what follows, we present the co-design process adopted in the project, the tools used and a critical reflection upon their application and effectiveness.

The BeauCoup Co-design Approach

Our co-design approach is based on structured workshops, each one providing input to the next in an incremental and iterative co-design process Fig. 1. Rather than focusing on the development of new tools, we selected existing ones and concentrated on defining an iterative co-design process articulated in workshops of different nature and with various stakeholders, leading to the definition of three models of museum services described later.

Three types of workshops define our approach, differing by participants' roles, objectives and materials. Fig. 1
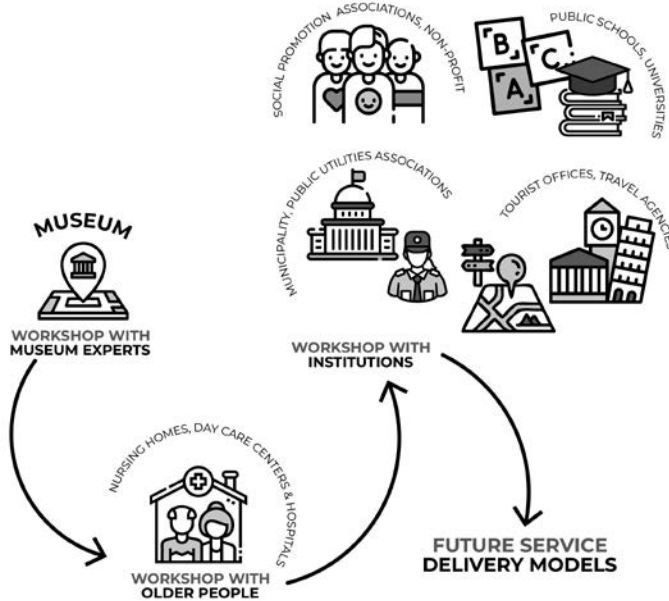
Workshop with museum experts (secondary users)

The first type of workshop involves museum experts (e.g., museum directors, curators, educators), accessibility experts, designers, and technology experts. It aims to select cultural items from the museum collection, experiment with digital technologies, and discuss the characteristics of future services in collaboration with institutions and organisations providing social services.

The workshop starts with a "How might we" question: *How might we design new museum services to better promote cultural heritage by making it accessible and engaging for older people with disability outside the museum context?*

To help answer this question, participants are engaged in a series of activities including:

1 Photo safari where people take photographs of the artworks they would like to promote through the new services and explain why. Fig. 2 left
2 Technology exploration of digital tools available in the consortium: the OptiVid which applies filter and optimization

techniques to videos to compensate for visual impairment (Sackl et al., 2021); the Feelif tablet and applications, designed for blind and visually impaired people, to explore digital pictures through tactile and auditory feedback; the Deaf reading assistant developed by Sign Time to make the texts accessible for deaf people using an avatar that speaks different sign languages; the Tactile Multimedia Guide, developed by VRVis, that combines tactile relief with multimedia content that reacts to your touch (e.g., sounds, videos); replicas of sculptures and artefacts made with 3D modelling and printing by the Fab Lab of the Università degli Studi di Siena.

3   Collage of the photos taken during the photo safari combined with cards representing the five senses, the technologies, and selected contents (e.g., videos, audios). **Fig. 2 right**

4   Narrative scenarios of future services defined collaboratively combining suggestions from different participants.

Workshop with older people (primary users)

The second type of workshop involves people with onset or age-related disabilities, representatives of care organisations (e.g., directors, educators, nurses), designers, and technology experts. It aims at envisioning multisensory experiences of cultural heritage through the manipulation of objects and storytelling. This workshop includes a technology exploration like the one performed in the workshop with museum experts followed by a reflection on what people like, dislike, and wish for each technology **Fig. 3**. This activity is followed by a presentation of the scenarios developed during the workshop with museum experts. Participants are involved in a storytelling activity stimulated by the scenarios, images of the artworks, and cards representing the five senses.

Workshop with institutions (tertiary users)

The third type of workshop involves designers and representatives of cultural and social institutions. It aims at designing future services based on the outcomes of the previous workshops. The scenarios that emerged from the previous workshops are evaluated and prioritised by rating their value, originality, feasibility, costs, and complexity. Then the services are defined based on user journeys and service blueprints prepared in advance by the designers, to identify all the necessary resources, actors, and activities to put the services into use.

Outcomes of the Co-design Workshops

This iterative co-design approach was applied in five countries: Italy, Austria, Slovenia, Portugal, and Switzerland. 10 workshops were organised involving a total of 53 participants along six months. 12 scenarios of future services were structured in three macro categories of Service Delivery Models (SDMs) with metaphorical names: "The Bag" where the cultural experience is enabled by small portable tools; "The Box" where the experience requires stationary exhibits and more bulky objects; "The Screen" where the experience is purely online.

Fig. 4 provides an overview of 12 future services that emerged from the entire co-design process. Only three of them are detailed for better legibility of the image. The following paragraph describes one of the services in detail.
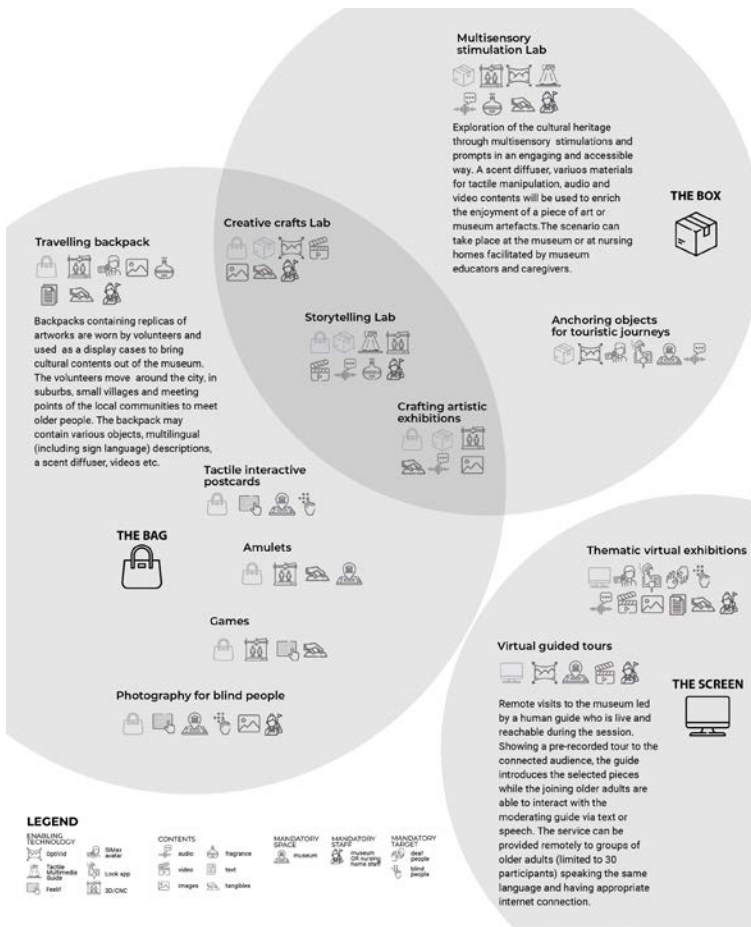
Multisensory stimulation Lab

Exploration of the cultural heritage through multisensory stimulations and prompts in an engaging and accessible way. A scent diffuser, variuos materials for tactile manipulation, audio and video contents will be used to enrich the enjoyment of a piece of art or museum artefacts.The scenario can take place at the museum or at nursing homes facilitated by museum educators and caregivers.

THE BOX

Creative crafts Lab

Travelling backpack

Backpacks containing replicas of artworks are worn by volunteers and used as a display cases to bring cultural contents out of the museum. The volunteers move around the city, in suburbs, small villages and meeting points of the local communities to meet older people. The backpack may contain various objects, multilingual (including sign language) descriptions, a scent diffuser, videos etc.

Storytelling Lab

Anchoring objects for touristic journeys

Crafting artistic exhibitions

Tactile interactive postcards

THE BAG

Amulets

Games

Thematic virtual exhibitions

Virtual guided tours

THE SCREEN

Remote visits to the museum led by a human guide who is live and reachable during the session. Showing a pre-recorded tour to the connected audience, the guide introduces the selected pieces while the joining older adults are able to interact with the moderating guide via text or speech. The service can be provided remotely to groups of older adults (limited to 30 participants) speaking the same language and having appropriate internet connection.

Photography for blind people

LEGEND

ENABLING TECHNOLOGY — OptiVid, SIMax avatar, Tactile Multimedia Guide, Look app, FeelIt, 3D/CNC

CONTENTS — audio, fragrance, video, text, images, tangibles

MANDATORY SPACE — museum

MANDATORY STAFF — museum OR nursing home staff

MANDATORY TARGET — deaf people, blind people

Multisensory Stimulation Lab

The SDM called "magic casket" takes the form of a dodecahedron containing stimuli organised according to themes selected by museum curators (e.g., maternity, protection, rural life), to enable a multisensory exploration of the cultural heritage enabled by an educator Fig. 5. This specific form allows several people sitting around the table to actively participate during the laboratory.

The magic casket is designed with a folding mechanism which, when opened, reveals the following set of elements:

- A fragrance diffuser to stimulate memories and imaginaries through olfactory perception (e.g., the smell of baked bread);
- A set of 3D printed replicas of museum artefacts, made of resin, which activate audio narrations though the NFC tag reader;
- Small replicas of vinyl disks to play traditional songs through the NFC tag;
- Interactive pictures to be explored through touch thanks to the use of the FeelIf tactile tablet;
- Other tactile stimuli such as embroidery made of laser cut felt and cork, and several tactile cards.

The stimuli contained in the magic casket can be personalised based on the museum collection and according to the characteristics of the primary users (e.g., needs, abilities, interests). A digital platform integrated in the museum website allows users to select items of interest and choose suggested configurations of the casket to purchase or rent Fig. 6.

Fig. 5
Magic casket with multi-sensory stimuli. The figure shows the magic casket closed (left) and open (right) with different multisensory stimuli. Author: Santa Chiara Fab Lab © 2023 All rights reserved.
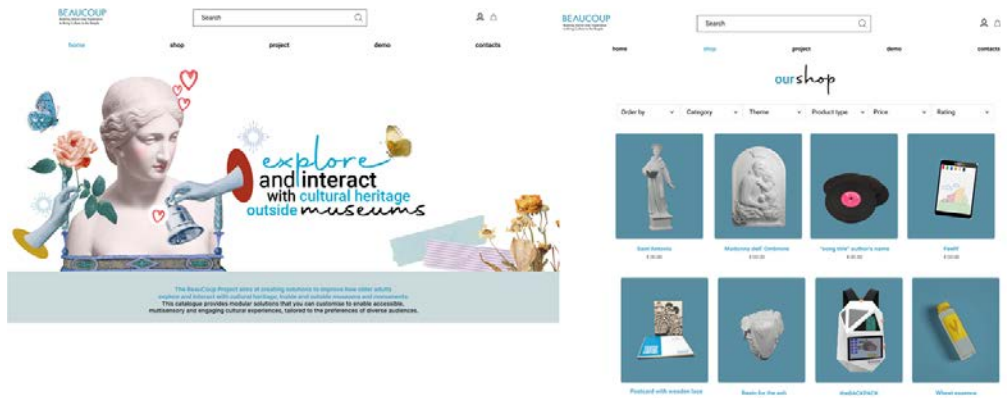
The magic casket enacts the concept of a "multi-layered journey" that is a proprioceptive, sensory, intellectual, aesthetic, and social experience aimed at inspiring learning, wonder, reflection, simple relaxation, sensory stimulation, and conversation among participants (Chatterjee, 2016; Levent & Pascual-Leone, 2014; Dudley, 2018; Christidou & Pierroux, 2019), making it accessible, engaging, and meaningful for older adults in contexts other than the museum.

Fig. 6
Digital platform to personalise the service. The figure shows the digital platform to select and personalise the items included in the magic casket. Author: Santa Chiara Fab Lab © 2023 All rights reserved.

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It was prototyped and evaluated by primary, secondary and tertiary stakeholders, and improved based on the collected feedback.

The evaluation workshops involved 32 older adults (primary users), 10 professionals from healthcare organisations or cultural organisations (secondary users) and 13 directors, managers, and decision makers (tertiary users) from healthcare organisations, cultural organisations, and the public sector.

The evaluation methodology was based on a mixed method: a quantitative evaluation based on the User Experience Questionnaire (UEQ) (Laugwitz et al., 2008), and a qualitative evaluation based on group discussions during the workshops.

The UEQ evaluates pragmatic and hedonic qualities that encapsulate diverse quality aspects. Pragmatic quality focuses on the purposeful or task-oriented facets of the product, emphasising efficiency and effectiveness in achieving user goals. On the other hand, hedonic quality concentrates on non-task-oriented aspects, such as the originality of the design or the aesthetic appeal of the user interface in a software product.

The collected responses to the questionnaire scored "Excellent" compared to the benchmark in both the pragmatic and the hedonic qualities, with an overall mean of 2.7 out of 3. Specifically, the scales with the higher scores are related to the pragmatic qualities of ease of use and efficiency, hedonic qualities of excitement and interest. This shows that the solution can attract and stimulate the users through easy and accessible interaction modalities.

The qualitative outcomes regarded the discussion about the potential of the service to facilitate the collaboration between the museum and social and healthcare organisations for joint value. It was reported that this new service can support the engagement strategy of museums towards diverse audience groups and contexts to reach out to communities through cultural encounters (Simon, 2010). The ease of use was considered an asset of the service, which can be customised with respect to the contents, the type of stimuli, and the duration of the intervention. The platform allows the museum to promote the artworks it preserves, and to reach an audience that is currently marginalised.

Homecare organisations reported that this service can improve their mission and care practices by fostering cultural welfare in marginalised groups like older adults living in nursing homes.

Concerns were expressed in relation to the sustainability of the service which would entail the involvement of a manager for the online service platform, the assembly and shipment of the magic casket, and the manufacturing of the stimuli. Some of the museums involved in the project are relatively small and managed almost entirely by volunteers. For this reason, the project is currently working on a sustainability model that can create value for museums and that is accessible to the institutions purchasing/renting the service.

Conclusive Remarks

This paper presents the co-design approach adopted in the Beau-Coup project which envisions a new role for the museum as a promoter of inter-institutional partnerships between the cultural and social sectors, with the objective of bringing the cultural heritage closer to older adults with disabilities.

The paper outlines accessible services delivered in collaboration with external parties aiming to rethink the impact of museums in an inclusive direction.

The co-design approach served the purpose of mediating knowledge among different stakeholders and creating new value, through the application of design practices to imagine future transformations of the museums' role (Celaschi & Vai, 2021).

The approach adopted in BeauCoup is based on an iterative and long-term co-design process articulated in a series of workshops with primary, secondary, and tertiary users, each with its own tools but coordinated to produce results based on each other's progress.

The co-design tools were selected starting from the literature review and adapted according to the skills of participants and the objectives of the workshop. In particular, the workshops with secondary users aimed at selecting the most significant artworks from the various museums, organising them into themes and imagining a possible multi-sensory enjoyment outside the walls of the museum. For this reason, simple tools such as photo safaris and card sorting were chosen to stimulate the creativity of experts in designing future scenarios.

The tools used with primary users were deliberately simple and experiential. The older participants and their caregivers were invited to try some technologies (e.g. the FeelIf tactile tablet), and to share their memories stimulated by scents, sounds and images selected by museum experts.

The tools used with tertiary users, however, were not simple stimulus tools, but journey maps and service blueprints developed by service designers to dissect the pain points and win points of the various solutions.

This approach reduced the risk of toolification, since the tools were not invented from scratch but selected from existing ones and adapted to the skills of the participants. Furthermore, the participants in the various workshops were grouped into categories (primary, secondary, and tertiary users), proposing activities in which everyone could effectively express themselves and contribute by bringing their own experience.

The role of the designers in this process has been determined. For example, creating future scenarios is a rather complex task for those without prior experience, as is blueprint-based service design. Tertiary users experienced some difficulty in navigating the various user journeys and identifying all the steps necessary to implement the service. The journey and blueprint maps have proven to be very useful tools for designers, but difficult to fully share with stakeholders.

However, it would be inappropriate to think that a service can be designed entirely with stakeholders. The workshops developed during the BeauCoup project showed great potential especially in

creating a context of collaboration and sharing with stakeholders, and in expanding the services offered by museums even beyond their walls. The details of the service and their implementation were the prerogative of the designers who, through the workshops, were able to bring together many different perspectives and harmonise sometimes divergent expectations and points of view.

Acknowledgment

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