Envisioning design strategies for intangible cultural heritage activation

Eleonora Lupo[1]

[1]Politecnico di Milano
eleonora.lupo@polimi.it

Abstract

This paper aims at presenting innovative design strategies for the Intangible Cultural Heritage (ICH) 'activation' in the age of 'heritage continuum'. The principal claim is that, in response to an age of crisis and turbulence (climate change, conflicts, post-pandemic recovery) and to the nowadays scenario of digital transformation (metaverse and phygital and smart reality) "caring ICH" means, more than a simple revitalisation, making it sustainably practiced or, rather, 'activated' to bring value, creativity and innovation, being a guiding resource for promoting social and economic development, more inclusive societies and intercultural understanding and collaboration, and new cultural production and co-creation. For doing this, ICH needs to be approached 'designerly' as a cultural ecosystem that binds together cultural contents, museums, cultural institutions, archives and digital repository, territory, communities, users and stakeholders. Moreover it is crucial pushing creatively forward beyond stereotypes the concept of valorization from mere conservation to an updated idea of safeguarding and taking care, addressing the lively and evolving nature of ICT, namely its adaptation and transformation, in order to allow for ICH to be re-enacted and brought back into use and meaning for contemporary society.

After a critical literature review on design for Cultural Heritage, the essay focuses on the potentialities of the actual scenario of ICH valorisation, and then, identifying and analysing interesting case studies and using theoretical reflection, presents some strategies to sustainably address the global challenges of the ICH activation (experience, interpretation, practice and re-use) to come.

Author keywords

heritage continuum; design-driven valorisation; activation strategies; Intangible Cultural Heritage; innovation.

Defining Intangible Cultural Heritage (ICH) in a Contemporary Way: the 'Heritage Continuum'

Understanding Intangible Cultural Heritage (ICH) in a new way addresses the need to innovatively represent the immaterial forms of contemporary culture, that is increasingly dematerialised and incorporating a growing number of born-digital or digitalised objects of nowadays cultural production. In comparison to traditional monuments or works of art, the acknowledged forms of ICH (UNESCO, 2003) have some specific features: ICH is a form of distributed knowledge, often not manifested in distinctive forms, but can be considered a valuable expression of typical creativity embodied in people, rooted in activities and places. ICH is at once traditional and contemporary; it is a community's living expression of identity, diversity, inclusion and belonging; it is locally-based, because it originated and is situated in a specific context and condition.

Due to its process nature of performance embodied in people (Kishenblatt Gimblett, 2004), in order to be preserved, this knowledge must be continuously practiced, taught and incorporated into society: in other words, 'activated' (Lupo et al., 2011). It is a social construct that can adapt time by time because is informed by contextual values that vary over time: 'close' values are those which must be understood against the cultural background of their context; 'remote' values, meanwhile, refer to meanings, uses, functions and aesthetics of the original context subsequently lost in the ICH's displacement from its original conditions (Campione, 2007).

This complex immaterial dimension challenges the traditional strategies for conservation and access favoured by museums and archives. In order to allow for ICH to be reenacted and brought back into use as living heritage, more open, easily-updated systems for its documentation and access are required.

At the same time, the cultural institutions are characterized by changes: following the so-called 'museum effect' (Putnam, 2011) the recently approved definition of Museum by the International Council of Museums (ICOM) is broadening the concept, shifting it from an 'institution' towards a knowledge production model which permeates the aesthetics and imaginary of everyday life. The concept of the 'archive' too has become a conceptual category with a generative value that examines and reinvents knowledge, creating new meanings (Maart, 2013). Consequently, boundaries between archives, collections and exhibitions are blurred not only within cultural institutions, with their functions, mechanisms and structures (Ozdil, 2014), but also in the personal and collective understanding and experience of cultural heritage.

To further complicate the matter, the increasing spread and adoption of digital and mobile technologies in the field of heritage demands an overhaul of the strategies for the management, collection, exploitation and reuse of cultural heritage by institutional bodies and potential end users; additionally, these new technologies profoundly affect the production and reproduction of cultural heritage within the owners' communities themselves. In the era of 'new heritage' (Kalay, Kvan, Affleck, 2008), technology enables different dynamics for

the use, spread and accessibility of culture possible remotely in space and time in a 'smart heritage'. Hence the idea of 'phygital': a blend of the physical and digital worlds. Applied to the field of cultural heritage, this leads to a meta-materiality that integrates tangible and intangible assets in a fluid, hybridised space and experience.

As a result, we define this complex cultural context as the 'heritage continuum': an ecosystem of cultural content that closely connects the collections of museums, cultural institutions, archives and digital repositories, territories, the keepers of heritage (and therefore their ICH) and users in a fluid, stratified space between the physical and virtual worlds which is ever-expanding and ever-enriched thanks to the digital dimension. This circulation of heritage can have a social, political and economic impact beyond the merely cultural dimension, bringing innovation in community or neighbourhood advocacy, sustainable development or new professional and creative practices (European Commission, 2018a, 2018b; Sonkoly, Vahtikari, 2018).

This represents the main challenge of today's cultural institutions: combining the intersections between heritage, technology and experience with social, political and developmental issues: and this is relevant for ICH too, that is a paradigmatic field for exploring the potential of an approach that goes beyond documentation and exhibition (Meissner, 2021). In this regard, design can be a crucial player.

Design for Cultural Heritage (CH): a brief literature review

The value of design's contribution to the field of heritage has been acknowledged internationally by design scholars since the early 2000s: on one hand a systematic overview was carried out to bridge design's role in sustainable local development (Maffei, Villari, 2006) and cultural heritage (Corte-Real et al., 2005); on the other hand technology have acquired a crucial role within the field of heritage (Allen, Lupo, 2012): with the raise of the digital age of museums (Parry, 2013), technologies are used to design narrative museums (Studio Azzurro, 2011) and simulated experiences and performative spaces (Dernie, 2006) by virtual, augmented and mixed-reality design (Kidd 2014) as well as tangible interaction design (Shaer, O., Hornecker, 2010; Hornecker Ciolfi, 2019).

To increase digital engagement (Visser, Richardson, 2013), mobile technology and social media have also become a focus of design (Spallazzo, 2012) in the sphere of inclusive and dialogic museums (Affleck, Kvan, 2008; Kuo Wai Tchen, Ševcenko, 2011; Salgado, Marttila, 2013). Many authors particularly emphasise the participatory turn in museum by co-design and co-creation approach to CH (Simon, 2010; Giaccardi, 2012; Arnaboldi, Diaz Lema, 2021).

In this rich context, the Italian academic design community has reframed the issue of 'Design for Cultural Heritage', placing it at the intersection between heritage, technologies, local development, and social and cultural innovation (Lupo, 2014; Irace et al., 2013; Capurro, Lupo 2016; Ceconello, Spallazzo 2011).

The Current Scenario of ICH Valorisation: Critical Issues and Research Questions

The UNESCO List of Intangible Cultural Heritage and Register of Good Safeguarding Practices provide an official index of all ICH, including 470 elements from 117 countries which can be browsed by year, safeguarding status (with three grades: 'in need of urgent safeguarding', 'representative list of ICH of humanity' and 'good safeguarding practices'), country or keyword (https://ich.unesco.org/en/lists). Almost every entry includes a short video and a photo gallery.

ICH is usually documented at an institutional level and transmitted using photographic or film documentaries and exhibitions, with little discussion of issues such as the self-representation of ICH or strengthening the impact of ICH in real life and contemporary society. Local projects eventually evolve into digital exhibitions or online repositories (Dai, Zhang, 2016; Li, 2022), but only few studies discuss the consequences of using technologies in documenting intangible knowledge (Graham, 2009; Rodil, 2017). Another common approach, especially towards minorities and native cultures, is based on the musealisation of their ICH, thus promoting postcolonial perspectives (Alivizatou, 2012).

At the opposite there are examples of first-hand experience and appropriation of ICH, whether through public festivals (promoted at institutional levels by cultural institutions or museums) or through events in which people can watch live performances or learn traditional skills and techniques first-hand: these experiences, with their ephemeral nature, often lack the continuity that would allow for an in-depth understanding of ICH, dynamics of change, and the potential of intercultural reproduction.

It is also interesting to note that some forms of CH which are not on the official list of ICH are characterised by more experimental attempts at promotion, leveraging technologies and participatory approaches in museums and temporary exhibitions: recent studies on the use of innovative technologies in ICH include Apps and Artificial intelligence (Li, Li, 2021; Xie, 2022). Some museums of cultures - which represent an evolution of ethnographic museums from a postcolonial perspective (Pagani, 2013) - are transforming their traditional approaches to exhibitions into more co-curatorial processes that offer a participatory and performative approach to ICH (Salvesen, Keithsch, 2021); however, these often focus on preservation (Papangelis, Chamberlain, Hai-Ning, 2016; Rodil, 2017) and don't consider ICH's potential for reuse and the consequences in terms of ownership and impact.

As a result, the current ICH valorization don't cover the entire chain from safeguarding to innovation, with the generation of social, cultural and economic impacts. This may perhaps be rooted in the compartmentalisation of the disciplines and approaches to ICH, as well as the difficulty - typical of social and cultural innovation - of scaling up (theorisation and regulation) and out (replication) effective yet specific projects (Moore et al., 2015).

Therefore, our research question is: how can ICH be valorized by design in a comprehensive activation strategy that preserve, document and promote it in a contemporary and engaging way, also facilitating ownership, practice and reproduction in order to support adaptation, development and innovation?

In the following parts, starting with some inspiring projects and critical considerations, we envision some insights, suggesting possible strategies and digital techniques for activating ICH by design.

A phenomenology of design strategies for the activation of ICH

As starting point for our envisioning, we looked for some

inspiring projects of ICH valorization, which show an exemplar and emblematic approach on two peculiar dimensions, selected accordingly our initial hypothesis: the fact that the activation strategies should focus on appropriation and practices, in order to make ICH accessible in a participative experience, being also possible interpreting, acting and transforming it.

» The first dimension expresses the objective with which the ICH is approached by the project in order to pursue different goals: it spans from knowledge to reproduction of ICH, with various forms of promotion in-between (from musealisation to utilisation to reuse).

» the second dimension shows the cultural permeability and openness through which ICH undergoes in the project, which runs from continuity (less open to change) to evolution (more open and permeable).

The intersection of these two axes generates four quadrants in which the examples are clustered providing four possible scenarios of activation, here discussed, with reference to the literature, in the following paragraphs.

The examples don't belong to the institutional domain of ICH listed in Unesco List, but can be assimilated to forms of ICH, for their immaterial and identity nature: history and memories of places and people, ethnographic heritage, cultural expressions of communities (art, languages, music) and so on.

Amplifying and Enriching the Narration and Experience of ICH

Combining continuity and knowledge there is the basic understanding of any ICH, gained by experiencing it. To supplement the existing traditional forms of photographic/film exhibitions, design applies various technologies to create amplified narratives which magnify, share, stage and dramatise ICH content in exhibitions and installations, up to immersive exhibitions (Pistola et al., 2021) or olfactory experiences (Miotto, 2016). Whilst the narrative approach appears to be merely contemplative, visitors have an active role in exploring the space, choosing their path and interacting with the content. This approach has clear potential if applied to institutional forms of ICH such as oral traditions, performing arts

Figure 1. To the East (by www.studioazzurro.com).

and social practices, improving their comprehension.
Some iconic examples are offered by the works of Studio Azzurro, whose temporary exhibitions or permanent installations are conceived as 'museums of narration'. Starting from the concept of sensitive environments, they create interactive spaces in which the content is activated by the (deliberate or unconscious) movements and actions of visitors in the space; a projects is 'To the East. People and Gods on the Silk Routes', Rome, 2011 a temporary exhibition which engage visitors with performative approaches involving objects, surfaces, screens and floors which activate sounds and projections.

This kind of strategy is also applicable outside museum spaces and contexts, through online systems (e.g. 'City of Memory' by Local Project, 2003) or via mobile applications that sup-

Figure 2. Explore 9/11 (by www. localprojects.com).

port augmented reality ('Explore 9/11' by Local Project, 2010).

Connecting Different Interpretations and Exchanges of ICH

In the space between knowledge and permeability, there is opportunity to better understand ICH by facilitating different interpretations. Instead of a monolithic vision, multiple perspectives can trigger an active interpretative approach. Design's potential role here is to connect and allow for the comparison - technological or otherwise - of different points of view to foster a deeper level of interpretation, thus promoting mutual understanding and respect. In this way, ICH also catalyses social relations and exchange between people, possibly sparking intercultural dialogue and providing an insight into the 'other'. This approach can be particularly relevant if applied to institutional forms of ICH, where it promotes self-representation by indigenous curation processes (Kreps, 2009) and supports the building of bridges between communities. One authoritative historical example refers to the concept of the dialogic museum (Kuo Wei Tchen, Ševcenko, 2011): the former Chinatown History Museum (now the Museum of Chinese in America) is pioneering 'dialogue-driven' practices and their implications for museums and cultural institutions (McCarthy, Ciolfi, 2008). This experiment started in 1990 with the dialogic stations of the exhibition 'Memories of New York Chinatown', in which people could contribute with their personal

Figure 3. StoryCorps (by www. localprojects.com).

Figure 4. Whispering table (by www.thegreeneyl.com).

memories and reflections to construct a collective database of timelines and biographies using a very low-tech system. This kind of strategy can also be applied outside museums and cultural institutions, in public spaces featuring simple interactive installations to both tell oral stories and collect them from people (e.g. 'StoryCorps' by Local Project, 2003).

Performing and Practicing ICH

In the space between continuity and reproduction lies the option of practicing and performing ICH in an active physical experience. The assumption is that bodily, multisensory engagement facilitates a greater sense of ownership and a deeper understanding of cultural heritage (Petrelli et al., 2013): an idea that is even truer of ICH, thanks to the embodiment it offers (Ruggles and Silverman, 2009; Marshall, Hornecker, 2013). Performance, a strategy that is already employed in museums and cultural sites (Jackson and Kidd, 2011), here consists in allowing users to literally perform and practice ICH first-hand: design can enable a visitor to perform a cultural practice or ritual, but in a controlled setting using an actorial approach or a more practical one: for instance a responsive environment in which the cultural content is activated not by stereotypical digital interactions, but using culturally consistent gestures coherent with those that normally bring the ICH (such as a ritual) to life in its original context (these are carefully explained to visitors to avoid misunderstandings about this simulated reenactment). Or, engaging users in learning activities with the heritage-bearers' community, for examples by training them with traditional handicrafts.

We are aware that gestures have the potential to create spectacularization or misunderstandings rather than conveying the ICH respectfully, especially in a transcultural experience, therefore these kinds of experiences need to be carefully designed. In addition, since the direct engagement often don't occurs in the context where the ICH originated, the spatial experience must always be set within a framework of staged authenticity (MacCannell, 1976) or low fidelity (Kidd, 2011) in relation to the ICH's native context, to avoid a simplistically folkloric reenactment of the past (Haldrup and Bærenholdt, 2015).

Good examples that avoid trivialising ICH into mundane fairs and shows, or extemporaneous workshops, are rare;

some fairly engaging projects are aimed at younger audiences, but the experience of ICH (and the richness of its content) is obviously often oversimplified. Interesting examples can stem from the concept of tangible interaction (Shaer, O., Hornecker, 2010), which denotes systems in which the experience relies on materiality, bodily/embodied interaction, and eventually physical representations of data. 'Whispering Table', an interactive installation designed by Studio TheGreenEyl in 2009 for the Jüdisches Museum of Berlin, is based on tangible user interfaces (TUI) in an accurate cultural and behavioural setting, namely a communal dinner.

This kind of strategy should be implemented in permanent museum display, as well as in cultural and educational activities within a museum setting. Outside museums, any such approach should carefully consider the adequacy of the accuracy or approximation of the performance offered to the public.

Transforming, Rewriting and Reusing ICH

Finally, in the area between permeability and reproduction lies the potential for the continuous adaptation, transformation and evolution of ICH. Whereas strict cultural conservation sometimes approaches fundamentalism, cultural heritage is naturally subject to cyclical processes of selection, reproduction, oblivion and rescue. In particular, as a living heritage, ICH is even more subject to dynamic changes and negotiation and adaptation processes influenced by time and context: it is continuously 'rewritten' and adjusted by its bearers in its socialisation and transmission from generation to generation, or in the relocation of a culture or a community (e.g. migration) in order to remain meaningful and functional to the community. Here, design can help by multiplying and stratifying new meanings of ICH, supporting its rewriting and reuse with participatory approaches, including from a transcultural perspective, i.e. the contributory approach enabled by museums and exhibitions which involve visitors adding personal content through digital and social media technologies.

In the field of cultural heritage, this can lead to the co-creation of cultural content and co-curation strategies. Some crucial issues here include the production of relevant, culturally-consistent content (authoritativeness) and the recognisability of the author (authorship and intellectual property) to ensure the overall quality of the ICH experience, selecting and labelling museum-authored content, expert-generated content and generic UGC via a system of moderation (Ridge, 2007 and 2014).
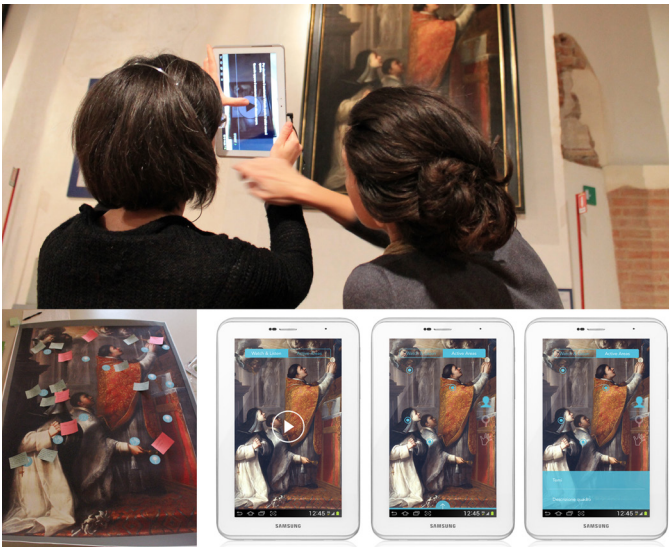
Figure 5. Museo Diocesano, Milano: app development (by the Author).

One example is a pilot application developed in 2014-2015, within the framework of the Europen project Mela- museums in the age of migration, for the Diocesan Museum of Milano by the Design for Cultural Heritage group at the Design Department of Politecnico di Milano. A mobile application has been designed with an intercultural (and interreligious) aim in the field of religious heritage. In the initial stage, it stimulated and gathered commentary from experts of different cultures and religions about certain paintings in the museums; in a second stage a digital app was designed consisting of a layered narration of culturally significant religious content and perspectives, addressing a general public from different religious backgrounds.

Design can also implement this approach for the practical and material reuse and reapplication of ICH knowledge, in new, culturally-intensive artefacts (Lupo, 2012). This can be sponsored by museums and cultural institutions, such as in the 'Inspired by China' project at the Peabody Essex Museum, which in 2006 organised an experiment with furniture makers who designed some new pieces inspired by the traditional furniture on show at the museum; alternatively, at a policy level by promoting adequate cultural and developmental frameworks, as well as collaborative actions between heritage owners and social, educational and economic stakeholders at governmental levels.

Critical considerations: Design-Driven Valorisation Chain of ICH from Safeguarding to Activation

The innovative design approach for activating ICH understands heritage as a process in which every phase of the chain of promotion, from safeguarding to use to reproduction, should be designed in an interconnected model.

According to some scholars (van Zanten, 2004), 'active safeguarding' is the appropriate terminology for ICH as it encompasses conservation, preservation and protection, whilst also addressing knowledge and transmission. In this regard, a fundamental revision of the hierarchies and authorities involved in the production, interpretation and representation of heritage is required. Indigenous curation (Kreps, 2009) is often used to promote self-representation, but this must also go hand-in-hand with co-curation strategies (Capurro, Lupo, 2016) to maximise people's engagement and contribution, even in the early stages of the process.

Similarly, the potential re-use of ICH needs to be enabled, ensuring that certain social practices and representations are maintained and practiced in the owners' community, and made accessible for other communities, or 'interpretive communities' (Hooper-Greenhill, 2003), using interactive, narrative, participatory and performative approaches to magnify its potentially endless multi-vocality and emphasizing it as a source for territorial development and community empowerment (Bandarin et al., 2011; Labadi, 2011). Furthermore, the reuse of ICH can support creativity and innovation, such as new cultural production (Comineli, Greffe, 2012; Sedita, 2012).

Within these processes, some issues are critical: Intellectual property right of ICH should rest to the heritage owners (Wendland, 2004): they should be considered producers (Shankar, 2010), and should thus be trained as managers and decision-makers for their CH, facilitating its capacity to reproduce, perform, transform and reuse the ICH, under three factors: ownership, control and impact of their heritage.

Conclusions

The four strategies presented above are conceived as not sequential, but rather complementary to one another: a strategy for 'activating' ICH should cover the various stages in the ICH chain of value, considering the four models as synergistic. However, coming to the practical side, whilst some strategies fit together more intuitively (enriching the narration of ICH by expanding it with multiple interpretations; alternatively, reproducing, reusing and transforming ICH by practicing and performing it), it can prove challenging to develop the four models together at once. Currently, the most important action for extending the chain of promotion for ICH is linking safeguarding with the most appropriate form of reproduction of the heritage at the earliest possible stages; this can use any combination of augmented narrations, multiple interpretations, embodied performances and transformative reuse. As such, we would argue that by using an incremental approach that blends together interpretations, practice and reuse to different degrees, it is possible to reconcile practical applications with long-term visions. The future development of this study will involve testing this theory with real projects and assessing the design-driven added value provided to ICH by this activation strategy, lending more solidity to the theory.

References

Allen J., Lupo, E. (eds). 2012. Representing Museum Technologies. Copenhagen: Copenhagen Interaction Design Institute

Affleck, J. and T. Kvan. 2008. "Memory Capsules. Discursive Interpretation of Cultural Heritage through New Media". In: *New Heritage. New Media and Cultural Heritage*, edited by Y. E. Kalay, T. Kvan and J. Affleck, 92-111. London and New York: Routledge.

Alivizatou, M. 2012. *Intangible heritage and the museum.New perspectives on cultural preservation*. Abingdon and New York: Routledge.

Arnaboldi, M., Diaz Lema, M. 2021. The participatory turn in museums: The online facet, *Poetics*, Volume 89, 2021,101536,

Bandarin, F., Hosagrahar, J. and Sailer Albernaz, F. 2011. "Why development needs culture". *Journal of Cultural Heritage Management and Sustainable Development*, 1(1):15-25.

Campione, F.P. 2007. "The ethnic work of art: meanings and values". In: *The Brignoni collection. Volume One: Art through Methamorphosis*, edited by F. P. Campione. Milano: Mazzotta.

Capurro, R., Lupo, E. (eds). 2016. *Designing Multivocal Museums. Intercultural practices at Museo Diocesano Milano*. Milano: Politecnico di Milano.

Ceconello, M. and D. Spallazzo. 2011. "Valorizing design culture through digital technologies". *Redige*, 2 (2): 44-63

Cominelli, F. and X. Greffe. 2012. "Intangible cultural heritage. Safeguarding for creativity". *City, Culture and Society*, 2: 245-250

Corte-Real, E., A.M. C. Duarte, and F. Carvallo Rodrigues, eds. 2005. *Pride and predesign. The cultural Heritage and the science of design*. Lisbon: IADE - Instituto de Artes Visuais, Design e Marketing.

Dai, J., Zhang, L. 2016. Design and Realization of Manchu Intangible Cultural Heritage Digital Exhibition Center Based on VR Technology. In: *International Conference on Contemporary Education, Social Sciences and Humanities (ICCESSH 2016) Proceedings*, Atlantis press, pp. 282-285

Dernie, D. 2006. *Exhibition Design*. London: Laurence King Publishing.

EC (2018a) *EU Strategic Framework for Cultural Policy 2019-2024*. Retrieved May 13, 2021 from https://ec.europa.eu/culture/policies/strategic-framework-eus-cultural-policy

EC (2018b) *New European Agenda for Culture*. Retrieved May 13, 2021 from https://ec.europa.eu/culture/document/new-european-agenda-culture-swd2018-267-final

Giaccardi E. (ed.). 2012. *Heritage and Social Media: Understanding Heritage in a Participatory Culture*. London and New York: Routledge

Graham, L.R. (2009). Problematizing Technologies for Documenting Intangible Culture: Some Positive and Negative Consequences. In: Silverman, H., Ruggles, D. (eds) *Intangible Heritage Embodied*. Springer, New York, NY.

Haldrup, M. and J. O. Bærenholdt. 2015. Heritage as Performance. In: *The Palgrave Handbook of Contemporary Heritage Research*, edited by E. Waterton and S. Watson, 52- 68. Basingstoke and New York: Palgrave MacMillan.

Hooper- Greenhill, E. 2003. Interpretive communities, strategies and repertoires. In: *Museums and their communities*, edited by S. Watson, 76-94. London & New York, Routledge.

Hornecker, E. and L. Ciolfi. 2019. *Human-Computer Interactions in Museums*. San Rafael CA, USA: Morgan & Claypool Publishers.

Irace, F. et al. (eds). 2013. *Design &Cultural Heritage*. Milano: Mondadori Electa.

Jackson A. and J. Kidd. 2011. *Performing Heritage: Research, Practice and Innovation in Museum Theatre and Live Interpretation*. Manchester: Manchester University Press.

Kalay, Y. E, T. Kvan and J. Affleck, (eds). 2008. *New Heritage. New Media and Cultural Heritage*. London and New York: Routledge

Kidd, J. 2011. Performing the knowing archive: heritage performance and authenticity. *International Journal of Heritage Studies*, 17, 1: 22-35.

Kidd, J. 2014. *Museums in the new mediascape. Transmedia, Participation, Ethics*. Surrey: Ashgate.

Kirshenblatt Gimblett, B. 2004. Intangible heritage as metacultural production. *Museum International*, 56(1-2): 52-64.

Kreps, C. 2009. "Indigenous curation, museums, and intangible cultural heritage". In: *Intangible Heritage*, edited by L. Smith and N. Akagawa. London & New York: Routledge

Kuo Wei Tchen, J. and L. Ševcenko. 2011. "The 'dialogic museum' revisited: a collaborative reflection". In: *Letting go. Sharing Historical Authority in a User-Generated World*, edited by B. Adair, B. Filene and L. Koloski, 80–98. Philadelphia: The Pew Center for Arts & Heritage.

Labadi, S. 2011. "Intangible Heritage and Sustainable Development: Realistic Outcome or Wishful Thinking?". Heritage & Society, 4(1): 115-118.

Li, X., Li, Z. (2021). Design Innovation of Intangible Cultural Heritage: Challenges on the Basis of Mobile Phone Culture. In: Soares, M.M., Rosenzweig, E., Marcus, A. (eds) Design, User Experience, and Usability: Design for Contemporary Technological Environments. HCII 2021. Lecture Notes in Computer Science(), vol 12781. Springer, pp. 37–46.

Li, J. (2022). Research on Display Design of Intangible Cultural Heritage Based on Literary Narrative Theory: A Brief Review. *Journal of Education, Humanities and Social Sciences*, 5, 370–377.

Lupo, E. 2012. Slow design. Cultivating culture and sensoriality in the artifacts shape and use. Elisava Temes de disseny, 28: 44-55.

Lupo, E. 2014. Beyond Social Innovation. Design as Cultures Active-action. In: *A Matter of Design. Proceedings of the V STS Italia Conference*, edited by C. Coletta, S. Colombo, P. Magaudda, A. Mattozzi, L.L. Parolin and L. Rampino, 137–154. Milano: STS Italia.

Lupo, E. et al. 2011. Design research and cultural heritage: activating the value of cultural assets as "open-ended knowledge system. *Design Principles and Practices Journal*, 5(6): 431-450.

Maart B. 2013. A research context for Imaginary Fact. In: *Imaginary Fact Contemporary South African Art and the Archive*, edited by B. Maart, 11-24. Grahamstown, South Africa: National Art Festival.

Mac Cannell, D. 2005. *Il turista. Una nuova teoria della classe agiata*. Milano: Utet.

McCarthy, J., and Ciolfi, L. 2008. "Place as Dialogue: Understanding and Supporting the Museum Experience". *International Journal of Heritage Studies*, 14 (3): 247-267.

Maffei, S., M. Parente and B. Villari (eds). 2006. *SDI Design Review 03: Il design per la valorizzazione dei beni culturali. Le premesse fondative della ricerca d.Cult*. Milano: Poli.design

Marshall, J., Hornecker, E. 2013. "Theories of Embodiment in HCI". In The Sage Handbook of Digital Technology Research, edited by Price, S., Jewitt, C, Brown, B., 144-158. Thousand Oaks, CA: Sage Publications.

Meissner, M. 2021. Intangible cultural heritage and sustainable development. The valorisation of intangible cultural heritage. New York City, USA: Springer.

Miotto, L. 2016. Using scents to connect to intangible heritage. Engaging the visitor olfactory dimension: Three museum exhibition case studies. In *Proceedings of the 2nd International Conference on Virtual System & Multimedia (VSMM)*, p-1-5.

Moore, M.-L., Riddell, D., and Vocisano, D. 2015. "Scaling Out, Scaling Up, Scaling Deep: Strategies of Non-profits in Advancing Systemic Social Innovation". *The Journal of Corporate Citizenship*, 58: 67–84.

Ozdil, E. 2014. "Archives as new spaces for engaging experiences: Technologies and Languages within the Scenario of "Heritage Continuum"". In: *Engaging Spaces – Interpretation, Design and Digital Strategies. Proceedings of the NODEM 2014 International Conference*, edited by H. Gottlieb and M. Szelag, 51-58. Stockholm: Interactive Swedish Institute ICT.

Pagani, C. 2013. Ethnographic museums: towards a new paradigm?. In: *European Museums in the 21st Century: setting the framework (3 vol)*, edited by L. Basso Peressut, F. Lanz and G. Postiglione, 151-171. Milano: Politecnico di Milano.

Papangelis, K., Chamberlain, A., Hai-Ning, L. (2016). New directions for preserving intangible cultural heritage through the use of mobile technologies. In n MobileHCI '16 Proceedings of the 18th International Conference on Human-Computer Interaction with Mobile Devices and Services, 6-9 Sept 2016, Florence, Italy p. 964-967. New York : ACM. doi: 10.1145/2957265.2962643

Parry, R. (ed.). 2013. *Museum in a digital age*. New York: Routledge.

Petrelli et, al. 2013. "Integrating Material and Digital: A New Way for Cultural Heritage". *Interactions: new visions of human-computer interaction*, 20(4): 58–63.

Pistola T. et al. 2021. Creating immersive experiences based on intangible cultural heritage. 2021 *IEEE International Conference on Intelligent Reality (ICIR)*, Piscataway, NJ, USA, 2021, pp. 17-24.

Putnam, J. 2001. The Museum Effect. In: *Art and Artifact. The Museum as Medium*, edited by J. Putnam, 34-65. London: Thames & Hudson.

Ridge, M. (2007) *Sharing authorship and authority: user generated content and the cultural heritage sector*, https://www.miaridge.com/paper-sharing-authorship-and-authority-user-generated-content-and-the-cultural-heritage-sector/

Ridge, M. (ed). 2014. *Crowdsourcing Our Cultural Heritage*. Farnham, UK: Ashgate.

Rodil, K. (2017). A perspective on Systems Design in the Digitisation of Intangible Cultural Heritage. *International Journal of Intangible Heritage*, 12, 190-198.

Ruggles F. and H. Silverman (eds). 2009. *Intangible Heritage Embodied*. New York: Springer - Verlag.

Salgado M. And S. Marttila. 2013. "Discussion on inclusive, participative and open museums". In: *Beyond control: the collaborative museums and its challenges. Proceedings of the NODEM 2013 International Conference on Design and Digital Heritage*, edited by H. Gottlieb, 41–48. Stockholm: Interactive Swedish Institute ICT.

Salvesen, L.B., Keithsch, M. (2021). Preservation and promotion of Intangible Cultural Heritage. A participatory design approach. In Grierson, H.. Bohemia, E., Buck, L. (eds) *DS 110: Proceedings of the 23rd International Conference on Engineering and Product Design Education (E&PDE 2021)*, VIA Design, VIA University in Herning, Denmark. 9th -10th September 2021, The Design Society, 1156. https://doi.org/10.35199/EPDE.2021.31

Sedita, S.R. 2012. "Leverging the intangible cultural heritage: novelty and innovation through exaptation".*City, Culture and Society*, 3: 251-259

Shaer, O. and E. Hornecker. 2010. "Tangible User Interfaces: Past, Present, and Future Directions". *Foundations and Trends in Human–Computer Interaction*. 3 (1–2): 4-137.

Shankar, G. 2010. "From subject to producer: reframing the indigenous heritage through cultural documentation training". *International Journal of Intangible Heritage*, 5: 13-24.

Simon, N. 2010. *The Participatory Museum*. Santa Cruz: Museum 2.0.

Sonkoly, G., Vahtikari, T. (2018). *Innovation in Cultural Heritage research. For an integrated European research policy*. Brussels: European Commission Directorate-General for Research and Innovation

Spallazzo D. 2012. *Mobile Technologies and Cultural Heritage. Towards a design approach*. Saarbrucken: LAP Lambert Academic Publishing

Studio Azzurro. 2011. *Musei di narrazione. Percorsi interattivi e affreschi multimediali*. Milano: Silvana Editoriale.

UNESCO. 2003. *Convention for the safeguarding of Intangible Cultural Heritage*. Accessed January 2021, https://ich.unesco.org/en/convention

Van Zanten, W. 2004. Constructing new terminology for Intangible Cultural Heritage. *Museum International*, 56 (1-2): 36-44.

Visser, J. and J. Richardson J. 2013. *Digital Engagement in Culture, Heritage and the Arts*. Accessed January 2021 http://digitalengagementframework.com.

Xie, J, 2022. Innovative Design of Artificial Intelligence in Intangible Cultural Heritage. *Scientific Programming*, vol. 2022, Article ID 6913046, 8 pages, https://doi.org/10.1155/2022/6913046

Wendland, W. 2004. Intangible Heritage and Intellectual Property: challenges and future prospects. *Museum International*, 56 (1-2): 97-107.