From "Exhibition" to "Laboratory": Rethinking Curatorial Practices Through a Digital Experimental Project. The Case Study of #DolomitesMuseum - Laboratory of Stories

De "exposição" a "laboratório": repensar as práticas curatoriais através de um projeto experimental digital. O estudo de caso de #DolomitesMuseum - Laboratório de Histórias

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ABSTRACT

Digital curation is one of the most experimental areas of museum practice introduced by the digital revolution. A whole new generation of cultural experiences are emerging from the interaction with online spaces and social media platforms, encouraging museums to explore new curatorial approaches. In this paper, we will show how a digital experimental project led to the rethinking of the exhibition format into a more collaborative, interdisciplinary and laboratory approach to museum curation. The case study analysed is Laboratory of Stories, a dynamic participatory archive which was co-designed with a vibrant community of heritage professionals, local communities, and lovers of the Dolomites during a three-year project. An evaluation study combining different qualitative and quantitative methods was implemented to explore the nature of this curatorial practice. A series of key findings emerged from the study: the introduction of new narrative styles and interdisciplinary perspectives; the involvement of different communities in the curatorial process; the shift from a tangible, object-based, to a more intangible, open, and dialogic interpretation of heritage and of knowledge making. The findings show how the 'laboratory' metaphor can help museums to embrace the challenges of a participatory, post-digital society, suggesting a novel approach where the co-creation of narratives is at the heart of the curatorial practice.
Keywords: Digital Curation, Digital Storytelling, Collaborative Design, Digital Heritage, Community Stories

RESUMO

A curadoria digital é uma das áreas mais experimentais da prática museológica introduzida pela revolução digital. Toda uma nova geração de experiências culturais está a emergir da interação com espaços em linha e plataformas de comunicação social, encorajando os museus a explorar novas abordagens curatoriais. Neste artigo, mostraremos como um projeto experimental digital levou a repensar o formato da exposição numa abordagem mais colaborativa, interdisciplinar e laboratorial da curadoria de museus. O estudo de caso analisado é Laboratory of Stories, um arquivo participativo dinâmico que foi co-desenhado com uma comunidade vibrante de profissionais do património, comunidades locais e amantes das Dolomitas durante um projeto de três anos. Foi implementado um estudo de avaliação que combina diferentes métodos qualitativos e quantitativos para explorar a natureza desta prática curatorial. Do estudo surgiu uma série de conclusões-chave: a introdução de novos estilos narrativos e perspetivas interdisciplinares; o envolvimento de diferentes comunidades no processo curatorial; a mudança de uma interpretação do património e da criação de conhecimento mais intangível, aberta e dialógica, baseada em objectos. Os resultados mostram como a metáfora "laboratório" pode ajudar os museus a abraçar os desafios de uma sociedade participativa, pós-digital, sugerindo uma nova abordagem onde a co-criação de narrativas está no centro da prática curatorial.
Palavras-Chave: Curadoria digital, Narrativa digital, Desenho colaborativo, Património digital, Histórias comunitárias

1. INTRODUCTION

Museums are in the midst of an epochal change, which is leading them to rethink their spaces as well as their practices of collection, curation, and audience engagement (Parry, 2010; Bautista, 2013). The digital revolution is having a key role in this transformation: the advent of new online spaces and collaborative platforms has offered museums new possibilities to share their heritage, connect different collections, engage audiences in more active and collaborative ways (Simon, 2010; Giaccardi, 2012; Zardini Lacedelli, 2018). The Covid-19 emergency further accelerated this shift, encouraging museums to conceive new activities on digital platforms to make people interact with the collections (Zardini Lacedelli et al., 2021). Online exhibitions, digital mapping, social media campaigns, crowdsourcing projects, participatory archives are only some of the new emerging practices of the post-digital museum (Parry, 2013).[1] These emerging practices are challenging consolidated tasks, roles, and previous assumptions in museums, fostering a rethinking of traditional curatorial forms, such as the exhibition. In this evolving context, experimental digital projects have become pivotal to identify the challenges and opportunities of these new forms of curation and engagement (Haldrup et al., 2021; Zardini Lacedelli, forthcoming), showing what could be the future directions of key areas of the museum practice.

In this paper, we will explore how a digital experimental project led to rethinking the exhibition format into a more collaborative, interdisciplinary and laboratory approach to museum curation. The case study presented in the paper is *Laboratory of Stories*, a dynamic participatory archive of the heritage of the Dolomites co-designed by a vibrant community of cultural professionals and Dolomites enthusiasts. Throughout the project, an evaluation study combining different qualitative and quantitative methods was implemented to explore four key elements of the experimental practice: the types of narratives and interpretative categories developed, the participants involved in the creation of the stories, the type of heritage created and collected in the archive and the process by which knowledge is produced.

The article will start with a literature review focused on the emerging practices in digital curation and digital storytelling and the role of design research and experimental approaches in the museum context. Next, a detailed description of the design of *Laboratory of Stories* and the project from which it originated will be provided. The paper will then present the research methodology and the key findings from the study. Finally, the conclusions will highlight how the 'laboratory' metaphor can inspire a new curatorial approach where the creation of narratives, and not their display, is at the heart of the process.

2. LITERATURE REVIEW

2.1. DIGITAL CURATION: NEW HORIZONS AND KEY CHALLENGES

Digital curation is one of the most experimental areas of museum practice introduced by the digital revolution (Cameron, 2021). Extending a consolidated practice outside the realm of materiality and physical dimension has been not without its implications. From the first sections of museum websites displaying online collections and the early virtual museums, the 2010s has seen the rise of interactive, learning, and participatory cultural platforms where diverse types of audiences can interact with different collections, discover learning resources, enrich their records, and upload new sources (Milligan et al., 2017). Within this context, a new concept of 'Digital heritage' has emerged (Parry, 2007; Zuanni, 2021), and new cultural practices such as online exhibitions, multimedia tours, sound walks, digital mapping, crowdsourcing have become an integral part of the cultural life (Giaccardi, 2012; Ridge, 2017; Zardini Lacedelli et al., 2021). This evolution is reflected in the increased number of content management software specifically dedicated to organising, displaying,

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1 The concept 'post-digital' (Parry, 2013) indicates a moment when digitality is becoming increasingly

assimilated as an integral part of museum organizational structures and development.

and making people interact with cultural resources at multiple levels (Asselin & Maisonneuve, 2012), a thriving area of experimentation where museums meet other types of cultural institutions. The free and open nature of these tools allow an increasing number of libraries, button-up archives, and small heritage organisations to experiment with digital curation (Hardesty, 2014; Gill et al., 2019). In most cases, these platforms foster the creation of entirely new digital born resources, emerging from the digitization of existing collections but, most often, as a result of the involvement of different communities (Radovac, 2018). Co-curation and co-creation of digital resources with citizens, amateurs, volunteers are, today, a consolidated trend which is leading museums to interact with non-institutional types of heritage and forms of popular culture and 'history from below'[1] (Moore, 1994; Flinn, 2007), and new practices of collecting public-generated and social media content (Galani and Moschovi, 2015; Boogh et al., 2020). One of the key challenges of co-creation is bringing and managing a plurality of voices, stories, and level of interpretations, which challenge the traditional museum authority (Proctor, 2010; Adair et al., 2011). Digital curatorial practices are accompanied by the emergence of a new type of authority which Phillips (2013) defines as 'Open Authority': 'a mixing of institutional expertise with the discussion, experiences, and insights of broad audiences' (Phillips, 2013). Transferring this principle into practice has been one of the key challenges in digital curation in museums, giving rise to new experimentations in narrative development.

2.2. NEW NARRATIVES, NEW VOICES THROUGH DIGITAL STORYTELLING TOOLS

The involvement of new voices in the museum narrative has been sustained by the development of a whole generation of digital storytelling platforms. The use of these tools in the museum context has favoured the involvement of subject groups who were not traditionally involved in museum curation. The museum closure during the COVID-19 emergency has further stimulated museums to experiment with these tools in order to find new ways to make people interact with their collections (Agostino et al., 2020; Samaroudi et al., 2020).

Digital storytelling, as the practice by which people use digital technologies to tell stories (Alexander, 2017; Robin, 2008), may encompass different tools and be used in diverse ways to foster cultural engagement and participation, strengthening relationships between museums and their audiences and promoting inclusion and citizens' awareness (Falchetti et al., 2020).

One of such tools is izi.TRAVEL, a smart-phone app for the collaborative creation of multimedia guides and audio tours. This platform was conceived to allow museums, local communities, and travellers to share stories about cities, local heritage, and cultural sites. Thanks to its participatory nature, izi.TRAVEL was employed in a growing number of participatory cultural projects which brought a diversity of voices in the narration of local heritage (Bonacini, 2019), including migrants and foreign language learners (Fazzi, forthcoming).

Another digital tool widely adopted by heritage organisations for its ability to bring together the archival and curatorial dimension with digital storytelling is Omeka.org.[2] Born as a free, open-source content management software for museums, libraries and archives, this platform has been widely adopted to involve communities in the creation of digital archives and online exhibitions. The versatility and openness of Omeka has stimulated heritage

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[1] 'History from below' is a type of people's history emerged in the 1960s which focuses on the lived experience of ordinary people and individuals not included in the traditional mainstream historiography, which tended to concentrate on the lives of great statesmen.
[2] Originally designed by the Roy Rosenzweig Center for History and New Media at George Mason University in 2008, Omeka can be downloaded and installed on a server or, alternatively, used in its hosting version Omeka.net. Its core functionality can be extended with existing plugins that allow users to create maps and timelines, enrich records with tags and collect user contributions.

institutions to experiment with the creation of dynamic participatory archives (Gill et al., 2019; Radovac, 2018). Key elements in these projects have been the rethinking of languages and vocabulary to describe cultural resources, a growing attention towards digital born content and multimedia elements, and the involvement of a growing number of contributors in the creation of stories. A critical analysis of the benefits and limitations of this platform has been recently developed within the 'Congruence Engine' project, with the aim to explore its adoption in connecting different collections (Zardini Lacedelli & Winters, 2022).

Finally, social media have increasingly been used in the museum context to involve online communities in new forms of participatory heritage narration. Dedicated campaigns, such as the Museum Week[1], were conceived to share stories around museum collections and connect heritage professionals worldwide (Zuanni, 2017). Museums have started to conceive dedicated social media campaigns to invite online audiences to share personal memories and stories around objects and themes of their collections (Zardini Lacedelli et al., 2021). These types of narratives on social media foster a diffused, collaborative, fragmented, crowd-curated form of digital storytelling, which raise intriguing new questions on the future of the collecting and curatorial practices and more in general on the role of museums as catalysts of social innovation (Zanetti et al. 2019).

2.3. COLLABORATIVE DESIGN METHODS IN MUSEUMS

Any institution who wants to experiment with new forms of digital curation and digital storytelling finds itself dealing with a series of key design challenges. What aims should the digital project have? Who should be involved? What digital tool should be chosen?

Recent studies have recognised the key role of design practices in the development of digital cultural heritage tools and the value of interdisciplinary museum teams coming together (Vavoula & Mason, 2017; Mason &

Vavoula, 2021). Design research approaches such as Research Through Design have been compared to Action Research in social sciences, with more emphasis on the creation of an artefact, which could be a product, a service or an activity (Swann, 2002, Zimmermann, 2010). Like Action Research, design research follows iterative cycles of 'planning, action, observation and reflection' and relies on the collaboration between the researchers and the insiders of an organisation. In Research Through Design, the researcher is explicitly involved as a designer and the creation of an experimental 'product' is also considered a tangible output of the research. Another key element of design practice is the employment of design strategies and tools such as prototyping, which allows the exchange of knowledge between participants and the internalisation of new knowledge in the organisation (Lim & Tenenberg, 2008; Mason, 2015).

In this thriving area, the collaboration between citizens and institutions have emerged as a key element of the co-design practices both inside and outside the cultural heritage context (Crooke, 2011; Bason 2017). In the Pararchive project, the co-design involved a range of communities – citizens, amateurs, curators, academics, technologies developers – together with two world class institutions – the Science Museum Group and the BBC – for the creation of a new storytelling platform (Popple, 2016). The use of collaborative methods in the creation of digital tools that are trusted and adopted by communities reflects a shift from an object-based to a processual and dialogic interpretation of heritage (Zardini Lacedelli, forthcoming). The Faro Convention for the Value of Cultural Heritage for Society highlighted the centrality of people in the definition of what heritage is. As a result, digital tools in museums are not finished products to be delivered to an audience, but facilitators of processes where participants are involved in the creation of meanings and interpretation. This perspective reflects the constructive conception of knowledge making (Hein, 1998),

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1 The Museum Week (https://museum-week.org) is a global online event launched in 2014 on Twitter, which allows museums to share their collections online inspired by seven hashtags. The campaign became a trending

global event on social media, involving over 60.000 participants from 100 countries and bringing together a community of cultural professionals, artists, and digital creators.

that can support the fragmented, interactive, and polyphonic nature of the digital domain (Cameron, 2021).

3. THE MUSEUMS OF THE DOLOMITES PROJECT

The case study analysed in this paper is *Laboratory of Stories* (www.museodolom.it/exhibitions): a digital, collaborative space co-designed with a community of museums, heritage professionals, independent researchers, citizens and lovers of the Dolomites within the 'Museums of the Dolomites' project (2019-2021). This three-year project was funded by the UNESCO Dolomites Foundation and coordinated by a digital-born organisation, the platform-museum Dolom.it. In this project, the development of an experimental digital space was aimed at connecting different collections of the Dolomites area and at stimulating a more active involvement of the communities in the discovery and promotion of the heritage of the Dolomites.

3.1. A LIVING HERITAGE: DOLOMITES UNESCO

The Dolomites are a mountain area in East-Northern Italy which extends within the boundaries of five Italian provinces and three Regions[1] of institutional, administrative, cultural, and linguistic diversity. Starting from their scientific discovery in the 18th century,[2] the Dolomites have frequented by geologists, explorers, and curious travellers, and by the mid-20th century it became the area of a heterogeneous development of tourism and sport activities mostly in the winter and in the summer. Nowadays, the area is rich in museums and heritage institutions in a diverse range of categories, sizes, typology, and number of visitors (Zardini Lacedell & Pompanin, 2020). These museums have strong relationships with the landscape, history, and culture of the populations of the Dolomites. In 2009, this territory was included in the World Heritage List of Natural Heritage

for the aesthetic value of its landscape and for the scientific importance of its geology and geomorphology, offering these museums the opportunity to become active centres of discovery and interpretation of the Dolomites UNESCO World Heritage. In February 2019, the website visitdolomites.com listed thirty-three museums, but this list represented only a small section of the heritage institutions present in the area.

At the beginning of the project, the research team developed a thematic mapping of museums and cultural institutions of the Dolomites to identify the principal areas represented by the museum collections. Three main categories emerged from this study: 'geological landscape', represented by institutions dedicated to the geological and naturalistic importance of the Dolomites (i.e. paleontological and science museums, natural parks); 'living landscape', which included institutions dedicated to the human life in the mountains (including anthropological and ethnographic museums, ecomuseums, museums of history and archaeology, but also to more recent phenomena such as the advent of tourism and sport); and 'interpretative landscape', represented by museums and institutions whose collections focused on Art, Photography, literature, music and other cultural aspects of the Dolomites.
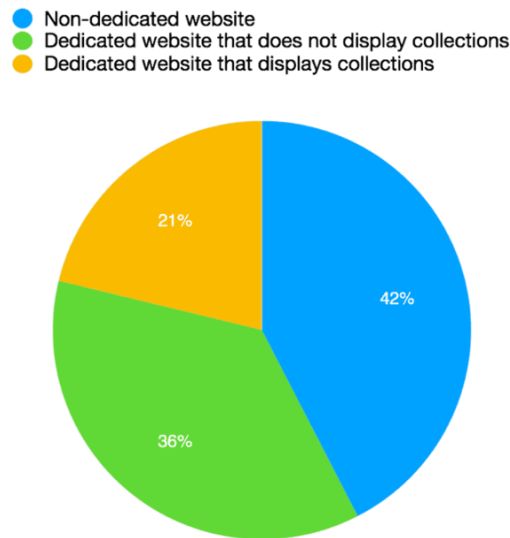
From preliminary online research developed in February 2019 on the visitdolomites.com website, only 21% of these museums offered the opportunity to explore their collections online. Of the nineteen museums with a dedicated online website, 12 used it as a promotional tool, to communicate the location, the opening times and cultural offer and only 7 had also an online collection section. Social media were more present but used predominantly with the same promotional aim (Zardini Lacedelli & Pompanin, 2020).

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1 The Dolomites provinces are Bolzano and Trento in Trentino - Alto Adige Region; Belluno in Veneto; and finally Pordenone, Udine e in Friuli Venezia Giulia.
2 The Dolomite rock was named after French scientist Deodat de Dolomieu (1750–1801) who discovered and described it. Since then, nobody has heard of the

Dolomites as a group of mountains in a specific region for a hundred years or so until after the Grand Tour period and the publication of severable books on the subject, such as The Dolomites Mountains by Josiah Gilbert and George Cheetham Churchill, and Untrodden Peaks and Unfrequented Valleys by Amelia Edwards.

Figure 1 - Analysis of the online presence of the 33 museums listed in the visitdolomites.com website

- Non-dedicated website
- Dedicated website that does not display collections
- Dedicated website that displays collections

42%
36%
21%

Source: Own elaboration

At the beginning of the project, there were sporadic collaborations among these museums, mostly on a scientific level. Thus, while potentially vast, the opportunity for collaboration was still unexpressed. The digital domain was identified by the research team as the key dimension of experimentation for its ability to address two interrelated aims: on the one hand, to increase the visibility and awareness of these collections and their key role in the promotion of the World Heritage Site; on the other hand, to benefit from the participatory nature of the digital tools to create a community of practice around the heritage of the Dolomites.

The research applied an iterative process of planning, action, observation, and reflection which involved a group of heritage professionals in the co-design of digital initiatives. In the first year of the project (2020), the research team involved a group of heritage professionals of the Dolomites area in a series of co-design workshops to identify similarities and patterns across the museums, create a community of practice, and develop a common digital strategy to promote their collections in a network-like dimension.

Table 1 - The project activities in each year

	2019	2020	2021
PARTICIPATORY PROCESS	3 Design workshops	12 Design workshops 4 Focus Group	7 Design workshops 2 Focus Groups
DIGITAL INITIATIVES		First edition of the #DolomitesMuseum campaign First 7 galleries of *Laboratory of Stories*	Second edition of the #DolomitesMuseum campaign 5 new galleries of *Laboratory of Stories* Redesign of the website

The output of these first workshops led to the design of a social media campaign dedicated to shared themes transversal to the museum collections (see section 3.2.). In the second

year (2021), the contributions collected in the social media campaign formed the basis for the first seven galleries of *Laboratory of Stories*, a shared digital space co-created by the

#DolomitesMuseum community on the Museodolom.it platform (see section 3.3.). In the third year (2022), the two initiatives – the social media campaign and the creation of the new galleries on *Laboratory of Stories* – were repeated, extending the communities involved, and a new web interface was developed to facilitate users' access and interaction with the shared heritage.
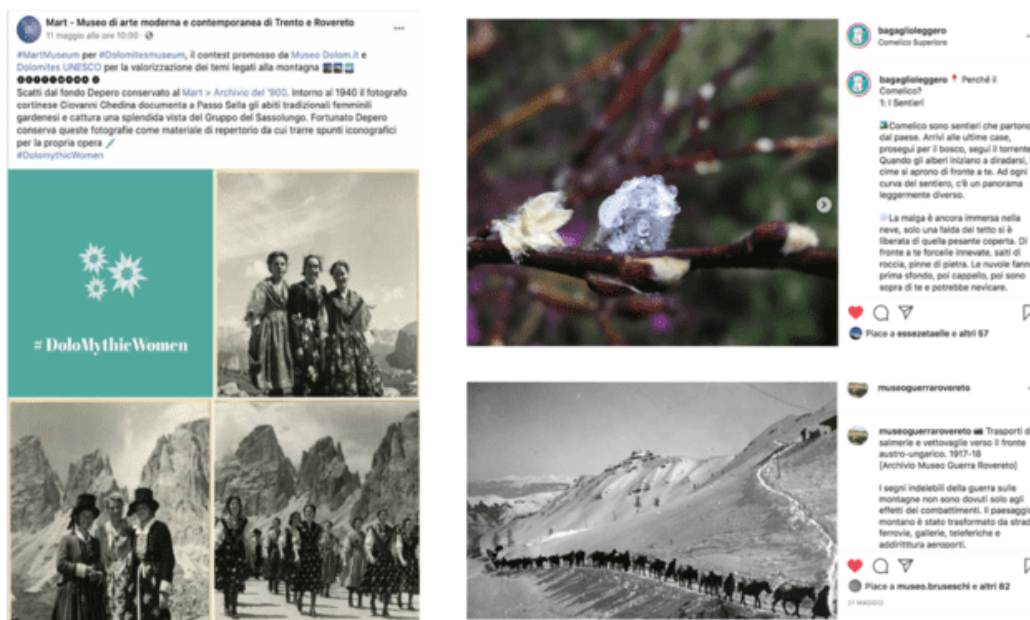
3.2. #DOLOMITESMUSEUM: THE SOCIAL MEDIA CAMPAIGN

The #DolomitesMuseum campaign was conducted a first time in March 2020 and a second time in May 2021 with the aim of creating a collective narrative of the heritage of the Dolomites on social media. The campaign was inspired by similar international events, as the #MuseumWeek and #Museum30, which every year invite museums to share stories about their collection and work in relation to a series of hashtags. In the case of our campaign, hashtags were chosen by the project participants during the design workshops conducted in 2020 and 2021(see

Table 1). The aim of these workshops was to discuss and identify a series of themes that were transversal to the different museum collections. Another characteristic of the campaign was its participatory nature: apart from museums and museum professionals, also other users contributed with their own collections, stories, reflections, testimonies, and memories.

The museums that participated in the design workshops were also the first to share stories and testimonies on their Facebook or Instagram pages. However, the campaign also drew the attention of other institutions both within and outside the museum context, such as other museums, visitor centres, libraries, touristic organizations, local community groups. Heritage institutions represented the biggest percentage of those who took part in the campaign, but there were also Dolomites aficionados, local residents, and entrepreneurs that shared their memories and experiences on their personal profile.

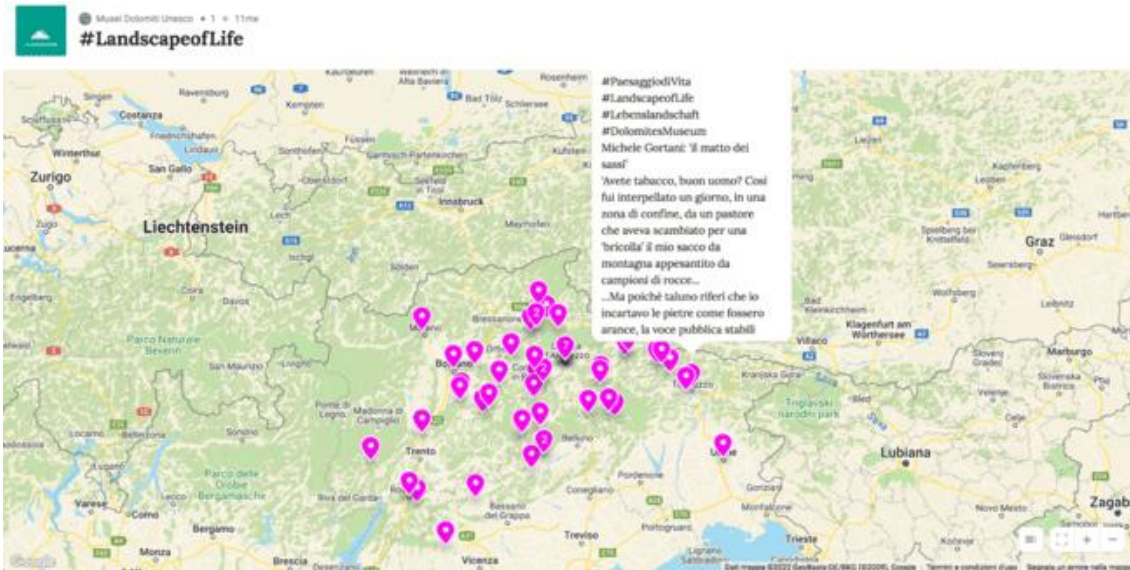Figure 2 - Three social media contributions for the #DolomitesMuseum campaign

Source: Instagram

The two-year campaign produced about five hundred stories and 2000 digital resources, showing the strong, affective relationship with the Dolomites area and the willingness to participate in its promotion. All the contributions were initially presented through a series of digital maps that also showed their geographical distribution.

Figure 3 - The digital map of the contributions created for the hashtag #LandscapeofLife in the second edition of #DolomitesMuseum (2021)
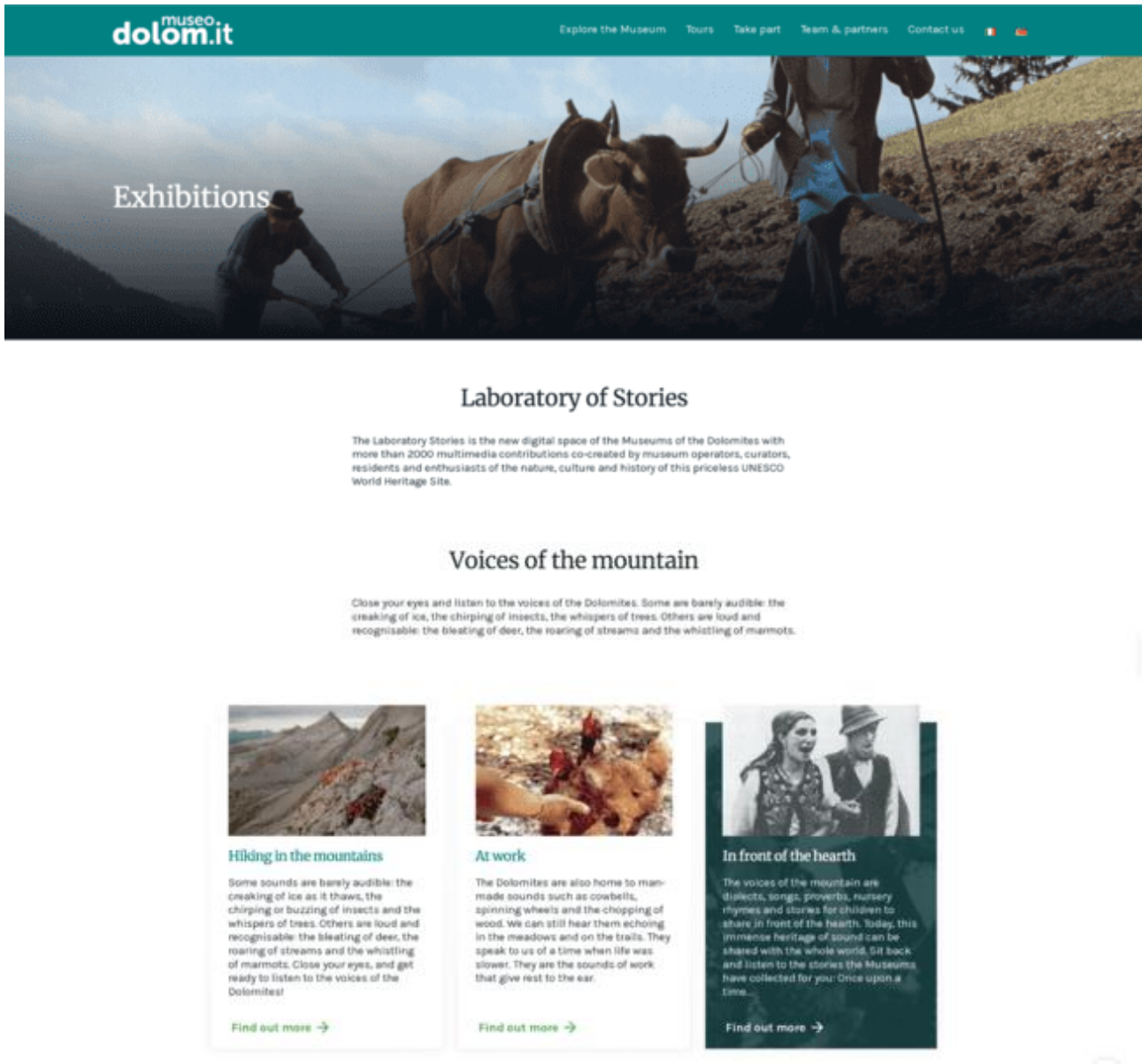

Source: *Padlet.com*

3.3. LABORATORY OF STORIES

Laboratory of stories is a collaborative digital space hosted by the Museodolom.it platform where cultural professionals, researchers, Dolomites citizens and lovers can share digital resources, stories and memories related to the Dolomites. At the end of May 2022, *Laboratory of Stories* hosted 1520 items and 1656 multimedia resources organised within twelve thematic sections which correspond to the hashtags used during the #DolomitesMuseum campaign (see section 3.2.). This space was designed by the project participants during a series of design workshops (see Table 1), conducted after the first social campaign in 2020, aimed at finding a way to collect the contributions shared on social media in one single collaborative place.

Figure 4 - The homepage of Laboratory of Stories on the MuseoDolom.it platform
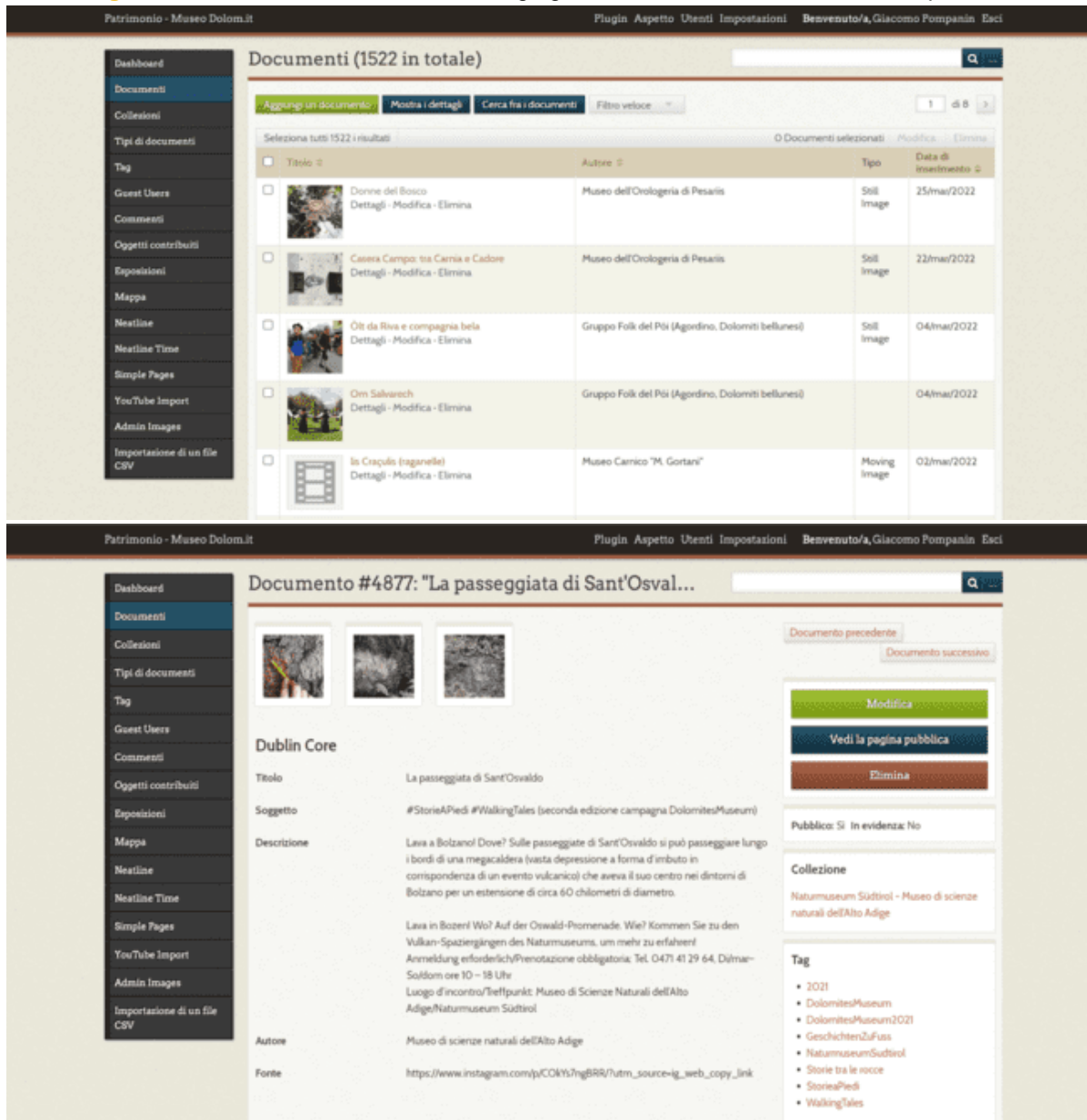

Source: Museodolom.it

At the end of the first edition of the #DolomitesMuseum campaign, participants were asked if they were interested in co-designing a virtual exhibition that would collect the resources produced during the campaign using the MuseoDolom.it platform. This platform was born in 2016 based on the platform museum model (Zardini Lacedelli, 2018): a participatory museum, with no walls, where digital contents are co-created by distinct groups of contributors. To organise these contents into digital narratives, the platform uses Omeka.org, a content management system which aims to help museums, libraries, and archives to make their digital collections accessible.[1]

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1 The first version of Omeka (Omeka Classic) was installed on the MuseoDolom.it website together with dedicated plugins for the creation of exhibitions, digital maps, user contributions, and the import of YouTube videos.

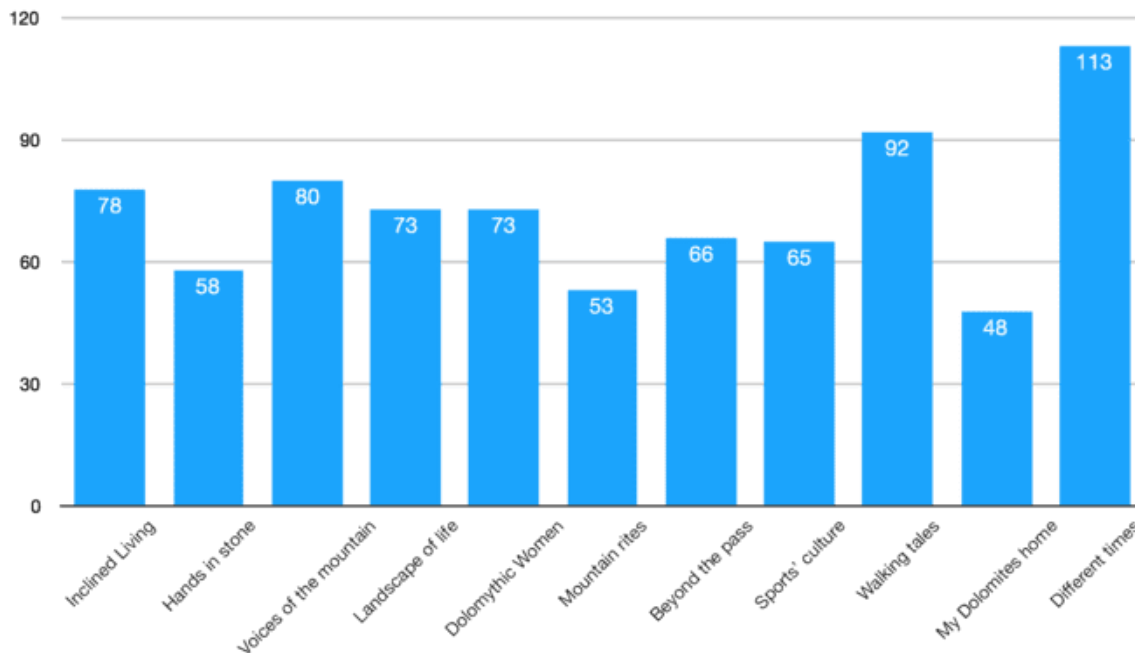**Figure 5 -** The Omeka dashboard managing the content of the Museodolom.it platform

This phase of the project was conducted completely online as a result of the Covid-19 outbreak in 2020, which forced the design workshops to be moved online using the Zoom platform. The online modality was highly successful as it facilitated the participation of people located in geographically dispersed territories. For this reason, the group kept meeting online even after the reopening of the museums in 2021. This phase was also joined by museum professionals that were not originally part of the project but that had heard of it thanks to the first #DolomitesMuseum campaign and later decided to contribute to the design of *Laboratory of Stories.*

The design of this participatory digital space took place over twenty-two design workshops between 2020 and 2021, involving a community of forty-one institutions and fifty-eight individual participants divided into working groups and organised around the hashtags of the campaign.

Figure 6 - The number of contributions hosted in each gallery of Laboratory of Stories

Source: Own elaboration

The number of materials collected for each hashtag, as shown in Figure 6, gave rise to the idea that they could be organised in different thematic galleries. Each group was then asked to identify sub-categories, starting from the reflection on the existence of common sub-themes within the campaign contributions. Every sub-category was assigned to a curator who would supervise the production and integration of new contents in the specific thematic gallery, editing them to fit the linguistic style of the digital space. The curators of the galleries were usually chosen among the museums which had developed an expert knowledge on the different subject areas, allowing them to guide the content development with their expertise and, at the same time, expand their knowledge on the field. The distinction between curators and contributors allowed participants to distribute the workload more flexibly by concentrating on the themes that were more in line with their museum's area of interests, without renouncing to contribute to other working groups. The collaborative curation of the online galleries was one of the most delicate and complex processes raised by the project, stimulating key discussions around quality control and data enrichment. Each working group had to find the right balance between curating each contribution, by editing the text and, in some cases, adding scientific references, and curating the "whole", that is the gallery. This also meant making sure that the language, style, and nature of each contribution reflected the spontaneity, informality, and immediacy of social media sharing.

In 2021, the interface of the MuseoDolom.it platform was modified, also affecting the outlook of *Laboratory of Stories*. Omeka, which had some limitations in terms of usability and accessibility, was combined with another platform, Wordpress, which was specifically customised by a company of IT technicians. The design of the new interface was based on the results collected during a focus group conducted in October 2021 (FG 06) with participants of different ages and professions not related to the museum world who were invited to explore *Laboratory of Stories* and share their perceptions about the strengths and constraints of navigating the digital space. The new interface, launched in March 2022, still relies on Omeka to organise the digital items but also allows for a more fluid navigation of the thematic galleries, encouraging visitors to appreciate the single contribution in the group.

Figure 7 - The gallery 'Managing and transforming the landscape

Source: Museodolom.it

4. THE STUDY

Throughout the 'Museums of the Dolomites' project, the experimental practice was constantly monitored through a mix of qualitative and quantitative data with the aim of answering the following research question: *what type of curatorial approach emerges from the co-design of Laboratory of Stories?* Specifically, the analysis of the digital curation process generated by *Laboratory of stories* focused on the following four key aspects:

1) The types of narratives and interpretative categories developed in *Laboratory of Stories*
2) The participants involved in the creation of the stories
3) The type of heritage created and collected
4) The processes of knowledge making

Data on these four dimensions was collected in distinct phases of the research project. In particular:

1) to explore the types of narratives and interpretative categories developed in *Laboratory of Stories*, we combined the insights from the results from the design sessions with the analysis of the focus groups and of the questionnaire developed at the end of the project (FG01, FG02, FG03, FG04, Q03). A narrative analysis was also implemented to understand the type of stories hosted in the digital space;

2) to explore the participants dimension, we combined the quantitative analysis of the contributions of the Omeka archive with the results of the questionnaires developed for the two editions of the #DolomitesMuseum campaign (Q01 and Q02);

3) to explore the heritage dimension, we combined the quantitative analysis of the digital items collected in the Omeka archive with the qualitative analysis of the focus groups with the project participants (FG01, FG02, FG03, FG04, FG05, FG06);

4) to explore the knowledge making processes, we combined the qualitative analysis of the focus group with participants (FG01, FG02, FG03, FG04) with an ethnographic approach derived by the participant observation of the researchers involved in the Museum of the Dolomites projects.

Each instrument of data collection is explained in section 4.1, while section 4.2 offers a presentation of the results.

4.1. DATA COLLECTION

As mentioned above, this study used different qualitative and quantitative methods of data collection, as described in Table 2.

Table 2 - The instruments of data collection

Instruments of data collections	Description and analysis procedures	Participants
Materials from 22 design workshops	Video, minutes, photographs collected during the design workshops (see Table 1)	58 participants
N. 6 focus groups	At the end of the first year of the project (October 2020) four focus groups were held which involved twenty-two project participants (FG 1_2020, FG 2_2020, FG 3_2020, FG 4_2020). The objective of these focus groups was to understand the impact of the project and the digital activities promoted on both the institutional and individual level Two further focus groups were held during the second year of the project (September 2021). The first (FG 5_2021) was aimed to explore strategies and tools to promote the *Laboratory of Stories*. The second (FG 6_2021) was aimed to explore the accessibility of the digital space, involving participants of different ages and professions outside the heritage institutions.	FG 01: 6 participants FG 02: 6 participants FG 03: 7 participants FG O4: 3 participants FG 05: 9 participants FG 06: 5 participants
N. 4 questionnaires	Two questionnaires were developed after the first and second edition of the #DolomitesMuseum campaign (2020 and 2021) to evaluate the participants' experience (Q01, Q02). A third questionnaire was developed at the beginning of the design process of the *Laboratory of Stories* to explore participants' perceptions on the nature and purposes of the digital space. A fourth questionnaire was developed in the third year (Q03), to explore the impact of the project on the cultural institutions and the individual operators involved.	Q 01: 34 participants Q 02: 20 participants Q 03: 46 participants Q 04: 27 participants
Entries in Laboratory of stories	A qualitative and quantitative analysis of the digital items hosted in *Laboratory of Stories* was implemented, to understand the type of digital resources developed in the project. A narrative analysis was also implemented to understand the type of narratives and stories created by participants.	N. 1520 Items

The active involvement of the researchers in the project activities, as part of the design practice, allowed to enrich these instruments of data collection with further elements that derive from a direct observation. In the participant observation methodology, the researcher familiarises with the research participants, and this allows an in-depth knowledge of the processes and lends credence to their interpretation (Ybema et al., 2009; Bernad, 2014). The experimental nature of the 'Museums of the Dolomites' project, which fostered numerous conversations and informal exchanges between the participants and the researchers, allowed to observe the four dimensions indicated above from other angles. The combination of these different methods made it possible to compare the participants' statements with what was developed and implemented in the project.

4.2. RESULTS

This section presents the key findings of the study in each of the four dimensions under investigation.

4.2.1. NARRATIVES AND INTERPRETATIVE CATEGORIES
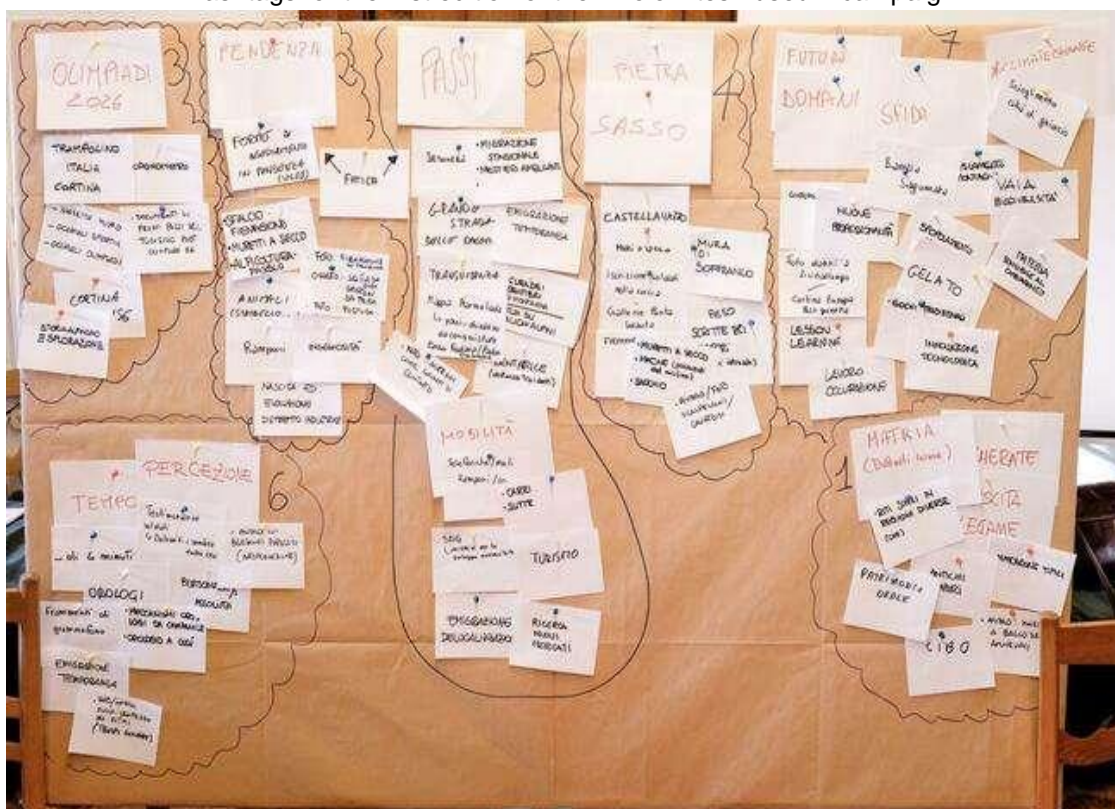
As regards the interpretative dimension, change was particularly observed in relation to the language used to describe the objects and narrate the stories. Working on the digital space brought participants to adopt the more evocative and personal narrative style and language which characterise social media (Page, 2012) resulting in what can be described as linguistic contamination.

A first element of linguistic contamination was observed in the textual dimension of the contributions, which were specifically designed to be shared on social networks. As was also observed by the participants in the focus group dedicated to the navigability of *Laboratory of Stories* (FG6), the texts are varied, revealing the heterogeneity of narrative styles and authors, and share the common feature of a greater brevity and a lighter tone challenging the authoritative voice of the institution (Simon, 2010) that still underpins many of the texts that can be found in museums and exhibition spaces.

I noticed that some of the texts were lighter, some more ironic, some more formal. There's a lot of variety, but they were all equally interesting and amusing. P06, University student, FG 06

The style of communication of social media also influenced the way the themes were identified as these had to function as hashtags of the #DolomitesMuseum campaign. For this reason, during the design workshops, participants long reflected on how the complexity of the themes could be represented in terms of "incisiveness", "clarity", "brevity" and "captivation" that generally characterise hashtags.

Figure 8 - The collaborative board created in the design workshop aimed to identify the hashtags for the first edition of the #DolomitesMuseum campaign

Source: Museums of the Dolomites project

Also, contributing to the development of a series of online galleries led to a change in the categories through which museums tended to interpret and narrate their collections. By working on a participatory digital space such as *Laboratory of Stories*, different concrete ways to connect the individual collections emerged, increasing participants' awareness of common

elements and of the value of the choral narrative:

To me [it was important] to discover that some little things can be connected with many others and that by connecting information that comes from different museums you give
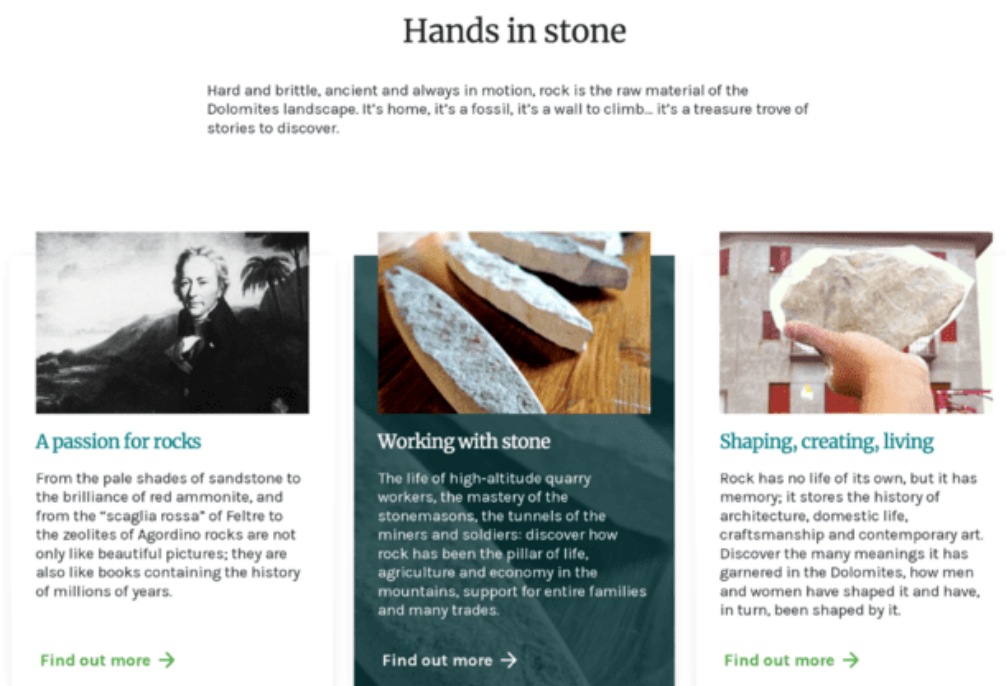
visitors the opportunity to learn about other territories which are far but also close. Curator 04, FG2

It was the collaboration among professionals with diverse backgrounds and interests working in different institutions that eventually brought to a transversal and interdisciplinary reading of the collections:

The project allowed us to reflect on our collections in a transversal manner. We reread our collections from a different perspective, and I believe this was one of the strengths that helped us grow. Curator 01, FG2

A demonstration of such approach is the hashtag #Handsinstone which was initially conceived through a geological lens but, during the first edition of the #DolomitesMuseum campaign, also triggered stories that showed a more anthropological and artistic perspective and focused on the importance of rocks for the people of the Dolomites. This variety gave birth to three galleries: 'A passion for rocks', which presents the types of rocks and minerals found in the Dolomites; 'Working with stone', that focuses on jobs related to rocks; 'Shape, Create, Inhabit', that offers some examples of artistic interaction between humans and nature.

Figure 9 - The three galleries developed from the #HandsinStone hashtag

Hands in stone

Hard and brittle, ancient and always in motion, rock is the raw material of the Dolomites landscape. It's home, it's a fossil, it's a wall to climb... it's a treasure trove of stories to discover.

A passion for rocks

From the pale shades of sandstone to the brilliance of red ammonite, and from the "scaglia rossa" of Feltre to the zeolites of Agordino rocks are not only like beautiful pictures; they are also like books containing the history of millions of years.

Find out more →

Working with stone

The life of high-altitude quarry workers, the mastery of the stonemasons, the tunnels of the miners and soldiers: discover how rock has been the pillar of life, agriculture and economy in the mountains, support for entire families and many trades.

Find out more →

Shaping, creating, living

Rock has no life of its own, but it has memory; it stores the history of architecture, domestic life, craftsmanship and contemporary art. Discover the many meanings it has garnered in the Dolomites, how men and women have shaped it and have, in turn, been shaped by it.

Find out more →

Source: Museodolom.it

Laboratory of stories prompted a sort of positive contamination. To speak about geology from a geological perspective is one thing. But to be able to speak about it through a range of stories that can be connected to geology, making the approach to the subject matter more holistic, is fundamental. Curator 06, FG2

Interestingly, the connections that emerged transversally throughout the collections also brought to the fore the relationship between museums and the scattered heritage, strengthening their strict connection with the territory:

What I find interesting about Laboratory of Stories is that the stories

do not always focus around museum objects or are related to some museum. The stories are connected to the places, natural environments or architecture that can be visited. Participant 07, FG 01
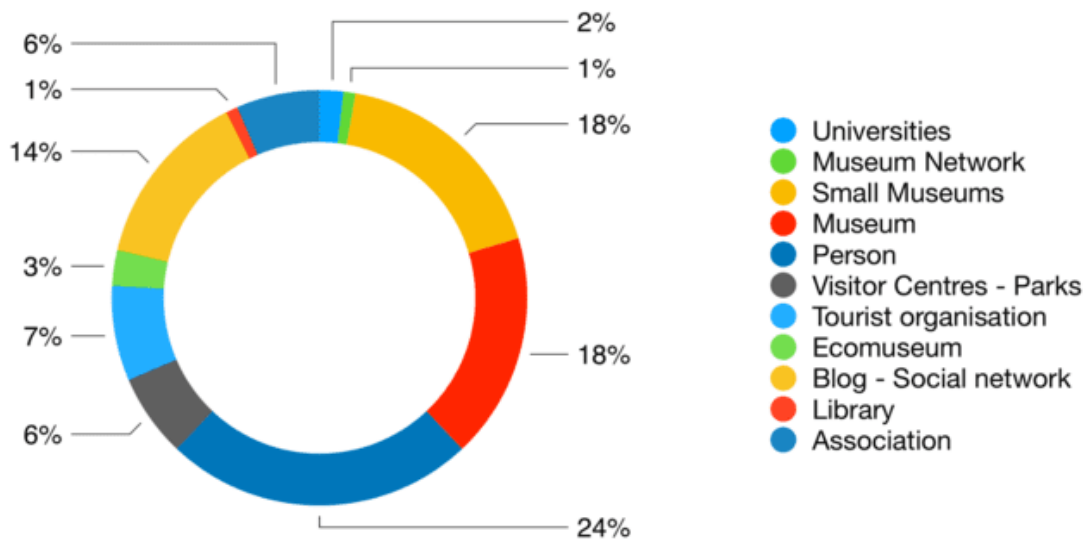
The diversity of themes was one of the elements that emerged from the focus groups with the online users. The words they used to describe their first reaction to *Laboratory of Stories* were 'Impressive', 'Exciting', 'Curious', 'Interesting', and 'Structured':

I speak as an American: I was very excited about the website and all the things to see. I really enjoyed myself. I thought about my students and how much fun they would have in browsing

a digital space this rich about the Dolomites. Participant 02, FG 06, Teacher

4.2.2. THE PARTICIPANTS INVOLVED IN THE CREATION OF THE STORIES

Laboratory of stories encouraged the creation of an open community, welcoming not only small, medium, and large museums but also tourism entities, citizens and lovers of the Dolomites. The analysis of those that contributed to the platform shows the heterogeneity of the participants. Museums and small museums represent the highest percentage (45%), followed by individual participants (25%), associations (15%), tourism entrepreneurs (10%) and digital entities such as blogs and portals (10%).

Figure 10 - The different typologies of contributors in 'Laboratory of Stories'

Source: Own elaboration

As demonstrated by the quotes below, the project was able to reach a wide community of individuals and small entities providing them with the opportunity to give voice to their heritage (Popple, 2016).

Laboratory of stories allowed the participation of those who live in the territories as well as of museums and

this gave us the opportunity to collect testimonies that otherwise would go lost. Quote from questionnaire Q03

From this perspective, the variety of participants and of their roles and experiences was perceived as a richness to promote. *Laboratory of Stories* prompted an inclusive and non-hierarchical approach to the narration of the heritage, going beyond the dichotomy

between curatorial authority and the public's contribution (Phillips, 2013).

Hierarchies disappeared and so did the apprehension normally felt by someone like the volunteer working in a small museum towards the curator of a bigger museum. Like in a democracy, our contributions were valued at the same level, and I felt it was beautiful. We overthrew the traditional schemes. Curator 02, FG4

A community united by a passion for the Dolomites and the heritage - tangible and intangible - they guard. This recognition of a common passion has allowed to dissolve the territorial boundaries, the geographical distances and the differences - cultural, administrative, managerial - between different provinces, also going back to including the realities that are outside the Dolomite territory in the strict sense, as it can be noted from the geographic distribution of the participants in Figure 11.

Figure 11 - The map displaying the geographic distribution of the contributors
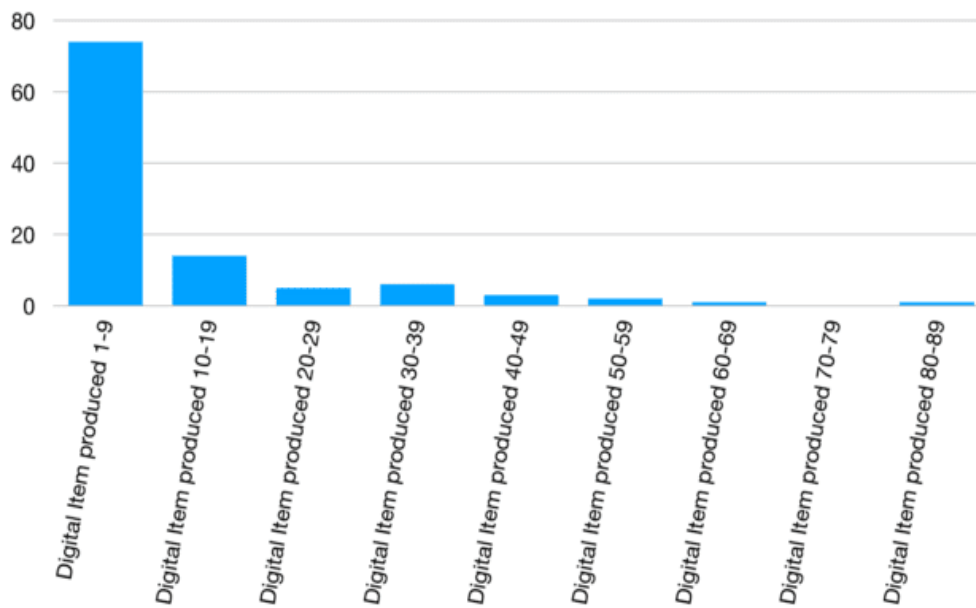

Source: GoogleMaps

As it can be seen from Figure 12, the level of involvement is not uniform but changes according to the individual participant, their willingness to contribute and the time at their disposal. This is one of the characteristics of

Laboratory of Stories, which has always left ample freedom in participation, thus allowing each contributor to be able to adhere to the proposals based on their sensitivity and availability.

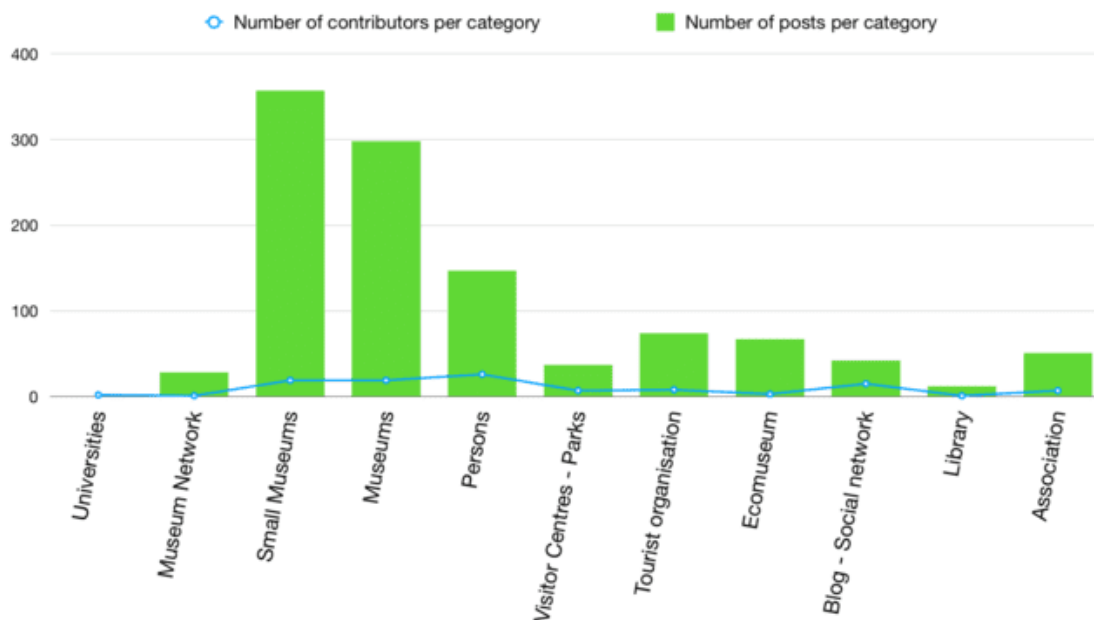**Figure 12 -** The number of participants for each range of items produced

In general, it should be noted that there have been some themes that have attracted more interest, and some typologies of participants tended to be more active than others. As shown in Figure 13, small museums were among the most numerous and active participants.

Figure 13 - The number of contributions produced by each category of participants

4.2.3. THE TYPE OF HERITAGE HOSTED IN LABORATORY OF STORIES

Laboratory of stories prompted museum professionals to narrate the heritage through a variety of multimodal materials that are normally not that well represented in the museum space, which traditionally pay more attention to the material aspects of their collections (Drotner et al., 2019; Galani & Kidd, 2020). The fact that the web naturally

encourages the use of digital resources such as videos, sounds, and images also brought to reconsider the importance of digital and sound heritage that often remains in the archive and is not shared with the public (Zardini Lacedelli, forthcoming):

> *I liked the variety embedded in Laboratory of Stories: the contributions, be them videos, articles, games, even music, that we would*

> *never consider to include. The whole ensemble is of an incredible quality. Participant 05, FG 01*

The analysis of the resources contained in the Omeka archive allows users to obtain a detailed overview of the type of digital assets hosted in *Laboratory of Stories*.

Table 3 - The digital resources hosted in Laboratory of Stories divided for typology (Images, Sound, Video)

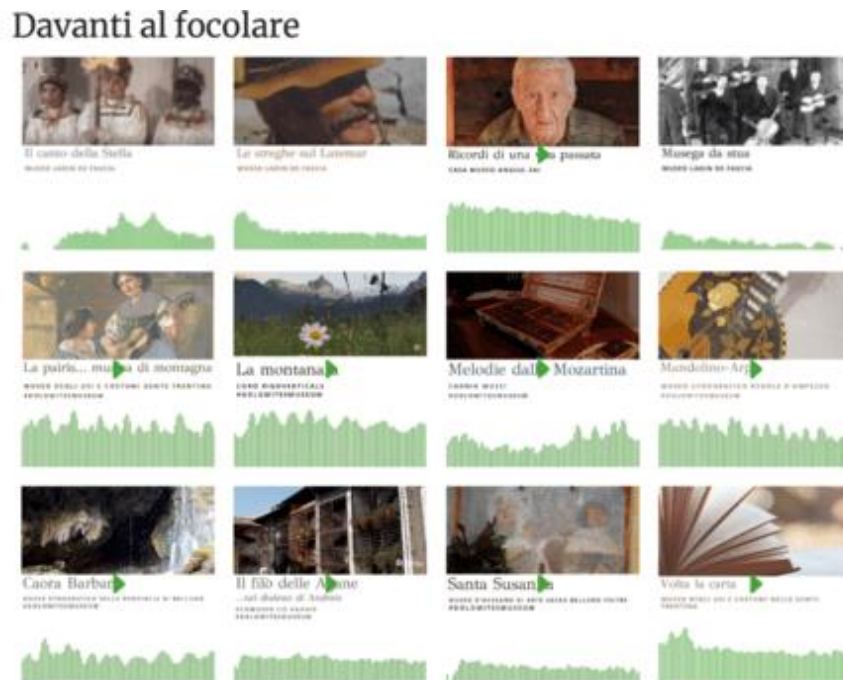| Types of digital resources	Number of items per type
Images	1391
jpg	1189
jpeg	38
png	164
Sound	184
mp3	47
mp4	137
Video	218
mp4	187
mov	31

Source: Own elaboration

Most items are of visual; out of 1656 digital resources, 1391 (83%) are images. It is the images that guide the navigation of the galleries, appearing in the preview, before the texts and the title. The effectiveness of this visual approach was confirmed by the participants in the focus group dedicated to the navigability of *Laboratory of Stories* (FG 06), which involved 6 participants from outside the working group of the Museums of the Dolomites, of different ages and professions.

> *I was especially intrigued by the photos, only later did I go to read the various insights. My generation is attracted to images: having such captivating and varied photos pushes you to deepen the theme and can bring young people a lot closer. Participant 01, FG06, Teacher*

> *I was surprised by the type of videos collected in the galleries, some of them are truly historical. Participant 05, FG06, Retired*

Sound heritage, which represents 11 % of total assets, deserves a separate focus. Most of these items are within the video category, as a sound video format has been created to allow sharing within social networks. In fact, sharing a sound on social networks is only possible via a link to an external audio platform or via uploading a video. To facilitate the use of sounds by users and enhance the sound element, during the second edition of the #DolomitesMuseum campaign, the MuseoDolom.it team developed a special interactive video that was applied to all contributions relating to the hashtag #VoicesoftheMountain.

Figure 14 - The sound gallery of Voices of the Mountain dedicated to traditional music and children's stories

Source: Museodolom.it

Of all the hashtags proposed, 'Voices of the mountain' was the one that aroused the greatest interest among the museums and an exceedingly high engagement gradient from some participants, as shown in Figure 6. The Lis Aganis ecomuseum, for example, took its cue from this hashtag to organise a systematic collection of different dialectal versions of the tale of the 'anguane', legendary female figures linked to water.

This attention to the more intangible aspects has had a very strong impact not only on the narratives, but on the very concept of what heritage is today, and on the role of museums in the collection of new contemporary forms of digital-born heritage (Boogh et al., 2020). One of the participants in the focus group on navigability suggested the possibility that *Laboratory of Stories* could become, for museums, a platform where they can exercise the curatorship of remarkably interesting and little-known digital resources, which are located outside the museums themselves:

It would be nice if those who entered this site could also see external materials. There is a lot of quality and little-known material that is dispersed on the web. It would be a way of curating things outside of museums as well. Participant 03, FG06, Retired

The museum operators participating in the project have noticed a shift in their curatorial approach, remarking how in their experience as *Laboratory of Stories* the focus has shifted from objects to life stories:

We have gone from only illustrating objects to telling stories of life lived in the mountains. We can continue to do so on social networks but also within our museums and enrich the guided tours or the simple narration of the object with life stories, cultural stories. Curators 05, FG2

This shift on the personal stories and intangible aspects of museums, elements that are traditionally not associated with the traditional 'museum display', has stimulated in users the desire to contribute (Zardini Lacedelli et al., 2021). Even the citizens and enthusiasts of the Dolomites felt that their knowledge and memories could contribute to this choral story:

> *If someone had a particular interest in something that is not found in any museum, such as how the bells ring in their town, and would like to participate by inserting content on the site, would that be possible? Participant 05, FG 06, Retired*

4.2.4. THE PROCESS OF KNOWLEDGE MAKING

The three elements previously analysed show important changes in the way that knowledge is produced. Operating in a digital space where it was not necessary to apply established thought patterns and interpretative approaches gave operators the freedom to rethink the meaning making process.

A new concept of knowledge emerged, which is reflected in the name to be given to the shared space. In the questionnaire sent to define together the most suitable definition, the participants wanted to depart from the 'exhibition' model. In the search for a term that could indicate the experimental, choral, and dynamic nature of the space, a shared interest emerged around the term 'Laboratory':

> *The word "laboratory" made me think this would be a perfect term. A workshop of ideas, a blurred place, where you "get your hands dirty" to produce something unique and wonderful. It made me think of the typical forge and the refined winged butterflies that are created by the expert hands of blacksmiths, covered in soot. Perhaps it is a somewhat poetic image, but also for*

> *this reason I see it suitable for this project of creation that we are carrying out thanks to you. Quote from questionnaire Q03*

More than an exhibition to 'present' knowledge to the public, *Laboratory of stories* is a training ground where operators themselves can get involved, also experimenting with new languages and registers to describe their collections. This space has stimulated the unexpressed desire to work in the field of creativity, to free oneself from pre-established patterns, to learn new things:

> *Laboratory of Stories has given us the opportunity to work in the field of creativity, which we never manage to do otherwise. Curators 02, FG 02*

> *Laboratory of Stories was like a gym for us: a space for us operators to experiment with new formats. To learn, to discuss. Curators 04, FG 03*

A more experimental way of conceiving cultural meanings that challenges what has been defined by participants as the 'serious' approach to scientific knowledge:

> *It is always thought that culture equals seriousness. If you are not serious, you are not scientific: but it is not true. Obviously, certain rules must be respected, but we also try to take things a little lighter, right? Have fun doing this job. I think this was a great lesson. Curators 02, FG 03*

This novel approach has also impacted the way participants conceive other traditional cultural institutions, such as the 'archive'. The dynamic nature of *Laboratory of Stories* introduced a new contemporary dimension to an institution that, until its origin, has been connected to the preservation of the past. Participants describe *Laboratory of Stories* as a 'dynamic, participatory archive', which

stimulates to reflect to our present and to imagine our future:

Archive: not in the classical sense, but in a new sense of memory and enhancement, display and enrichment, a springboard for reflection and evolution. Quote from questionnaire (Q04)

This new way of conceiving knowledge is not without efforts and challenges. Working in the field of creativity and experimentation requires a leap into the void, the will to lose control, to leave the known for the unknown.

Building a digital space like Laboratory of Stories is a huge, unanimous commitment. It necessarily involves a challenge: you don't know what it will be like, you don't know how it will go. Curators 02, FG3

In addition to this individual challenge, cultural operators need to deal with the lack of confidence with these new forms of knowledge making in their organizations (Zardini Lacedelli et al., 2019). At the end of the project, the operators expressed the need to engage their own managers and administrative bodies in the project, to convey the value of *Laboratory of Stories* and the new forms of knowledge making it encompasses.

I felt very enthusiastic when I met with you, but every now and then I felt abandoned and misunderstood by my own institution. The managers of my museum did not ask me what Laboratory of Stories is, what it entails, what added value it can have for us. Curators 01, FG3

This need is strictly related to the sustainability of *Laboratory of Stories.* The MuseoDolom.it website is owned by a no profit cultural association which does not have the resources for the long-term

maintenance and development of this collective space. The Museums of the Dolomites project covered the maintenance and development costs during the three-year project (2020-2022), but future funding sources will be needed to sustain this space. This is a common challenge of participatory digital archives, which often originate from dedicated funded projects and, at the end, might evolve into volunteer initiatives which would need institutional support to last over time.

5. CONCLUSION

The co-design of the experimental digital project *Laboratory of Stories* has provided key insights on a new curatorial approach for museums of the twenty-first century. The 'exhibition' format was not perceived by the project participants as the most appropriate to convey the dynamic and open nature of the digital space, which was described as a 'Laboratory of Stories', a 'cultural platform', and a 'participatory archive'. A series of distinctive elements emerged from the digital experimental practice: the involvement of different community groups in the interpretative process (Duffy & Popple, 2017); the opportunity to experiment with different languages and interdisciplinary perspectives; the emergence of new forms of digital born and mediated heritage (Drotner et al., 2019; Galani & Kidd, 2020; Cameron, 2021); and the conception of knowledge as an open and dialogic process (Habermas, 1981; Hein, 1999). The experimental approach turned out to be not only a way to understand the challenges and emerging directions in the curatorial practices, but also a key element to define digital curation itself. The museum participants claimed the right and freedom to 'experiment', 'play', 'explore alternative directions', and break the boundaries of the cultural institutions to embrace a plurality of voices. An opportunity that was also strengthened by the use of Digital storytelling, which allowed the inclusion of individual and community stories (Bonacini, 2019). In this way, the citizens, amateurs, and enthusiasts involved in the creation of the stories could contribute to the discovery,

understanding and enrichment of the museum collections with the guidance of curators and researchers. The findings from the project show how the 'Laboratory' format, combined with digital storytelling tools, can help to bring together 'the institutional expertise with the experiences and insights of broad audiences' (Phillips, 2013). For museums, the laboratory metaphor can inspire a new curatorial approach where the creation of narratives, and not their display, is at the heart of the process. The digital world has offered the tools, the space, and the mechanisms to make this approach possible, but new, intriguing questions originate from this study. How to transfer the metaphor of the Laboratory to the entire museum experience, both virtual and physical? Is it possible to rethink the exhibition format as an open process where the boundaries can be constantly re-defined by participants and the content constantly co-created? And how to involve the managerial staff of the museum in this knowledge construction from below? In the future, more research is needed to address these questions with the aim of bringing museums closer to the values, approaches, and practices of a participatory culture (Jenkins 2009).

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