Heritage in lockdown: digital provision of memory institutions in the UK and the USA during the COVID-19 pandemic

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ABSTRACT
As the impact of COVID-19 emerged in early 2020 and physical movement was restricted as a public health measure, digital media consumption behaviour changed dramatically. The accelerated move to online consumption increased the urgency for memory institutions such as museums to introduce new ways to digitally experience cultural collections. This research aimed to understand how memory institutions adapted during COVID-19 lockdowns by surveying the existing and novel digital resources that enabled access to cultural heritage organizations. The research was conducted during the UK lockdown period (April-July 2020) when we collected and analysed data from 83 heritage institutions in the UK and in the USA regarding the number, type, format, intended audience and intended aims of digital engagement opportunities they offered. The analysis evidences how different types of memory institutions responded to social need during the lockdown by supporting online visitors with resources such as educational material, live events and creative activities, and highlights where museums have acted effectively and where changed approaches are indicated.

KEYWORDS
COVID-19; digital technologies; survey; memory institutions; audiences; multimedia content

1. Introduction

Memory institutions, including museums and heritage organisations, have a key role to play in social resilience, especially during crises such as the outbreak of the COVID-19 pandemic. Memory institutions are vital for the communities they serve as research and knowledge centres, evidencing the past and present of tangible and intangible heritage; but also contribute to community identity and cohesion, especially in times of uncertainty such as the global COVID-19 pandemic which comprises both a health and a social crisis (International Council of Museums\textsuperscript{2020d}).

As the impact of COVID-19 on everyday lives dawned on people early in 2020, digital media consumption behaviour changed dramatically as millions of people converted their work, social and educational activities from land-based to digital platforms in order to “shelter in place” or meet requirements for “social distancing” that were imposed to manage the pandemic. The UK reported a 29% increase on the time spent...
online, and a 20% increase of people using social media (Simon Kemp 2020).

During some periods of the COVID-19 crisis, organisations of all kinds were required to restrict to physical access to buildings and on-site provision of services. As expected, the galleries, libraries, archives, and museums (GLAM) sector were not exempted from the measures taken in response to the crisis. Apart from the immediate effect on institutions’ workforce and finances, organisations have had to close, postpone or cancel projects, performances, exhibitions and education programmes that they offer to their audiences. One possible course of action was to adapt these offerings for online access. It was proposed that online access to these activities could reduce isolation, improve mental health and support the educational and creative needs of diverse audiences.

The research that this paper presents was conducted during the lockdown period in the UK, from April to July 2020, when memory institutions were closed and they started to gradually re-open their physical premises to visitors. The aim of the research was to understand how the cultural heritage institutions adapted during COVID-19 closures by developing their digital capabilities; how new initiatives were integrated into existing digital offerings that enabled audiences to access cultural heritage resources during physical closures; and how the distinctive needs of audiences during the COVID-19 pandemic were met by the sector. In order to acquire a more complete image of the sector’s adaptation to the COVID-19 crisis, the research incorporated a comparative assessment of international responses during the lockdown by collecting and analysing data from institutions in the United States of America (USA) and in the UK. This comparison can be justified as i) both countries have a variety of memory institutions with relatively good levels of expertise and capacity in terms of digital technologies; ii) the lockdown in the UK and USA followed a similar timeline (whether this was country/state-wide or happened on a phased basis) with “stay-at-home” suggestions from mid-March onwards; and iii) some comparable socioeconomic challenges in which heritage could make a difference or play a role in the two countries.

The research was conducted by an interdisciplinary team developing a methodology to record data collected through an extensive survey of digital offerings on the web and then analysing them quantitatively, while also providing useful insights through qualitative analysis. The development of the research and its results are reported in this paper. The paper’s main contributions include i) a unique record and useful insight into memory institutions’ digital offerings during a four-month period during which most museums in the UK and USA were physically closed to audiences; and ii) an in-depth analysis of the institutions’ response to a crisis, which has the potential to inform future digital developments to keep heritage content relevant to societal needs. For instance, the analysis of data allows us to identify trends and novel ways of enabling access to heritage resources which might have significance for memory institutions in the long, as well as short, term.

The paper is organised as follows: Section 2 describes the context for the activities being researched by examining the reports and briefings commissioned by professional associations and other sector-leading organisations. Section 3 presents the methodology for conducting the research and capturing data. A further section, Section 4, analyses and discusses the findings of the collected data. Finally, Section 5 presents conclusions and further work.
2. Context and related work

As the COVID-19 pandemic started to engulf the planet in the first months of 2020, a response from governments, institutions, industries and consequently the GLAM sector was generated in order to adapt to the new reality created by the need to ”shelter in place” or ”socially distance” in order to halt the spread of the pandemic. Major heritage stakeholders and professional associations developed guidance for museums and memory institutions during closures. Related work illuminating the impact of COVID-19 on the sector is also mentioned here.

2.1. Context: Guidance and recommendations from professional bodies

The closure of institutions due to the COVID-19 pandemic started around mid-March 2020 with The Wellcome Collection in the UK and the Metropolitan Museum of Art (MET) being amongst the first ones that announced that they were shutting down (McGivern and Kenney 2020; Kendall Adams 2020). Around the same time, some of the major heritage associations started to develop principles that would enable museums to cope with the uncertainty of closures while continuing to support communities. For instance, the American Alliance of Museums proposed three scenarios with different levels of impact (low, medium and high) which would work as the framework to manage risks while supporting communities and their well-being, protecting the institutions’ workforce and planning for the financial impact of the pandemic (Merritt 2020).

Guidance issued by organisations such as the Museums Association in the UK and the International Council of Museums (ICOM) would highlight similar challenges and steer the sector’s adaptation by prioritising (International Council of Museums 2020b; Olorunshola 2020; Museums Association 2020):

- the financial viability of heritage institutions through calls for support
- the security of collections and the safety of staff
- offering practical support for healthcare settings by donating equipment and volunteering
- alternative or innovative approaches to conduct activities that could not take place in the physical space, including new ways of working, revisiting of traditional tools and new communication channels with audiences
- prioritizing responses to immediate societal needs, including supporting vulnerable groups such as the homeless, people suffering from dementia, children needing access to educational material, refugees, minorities and women experiencing domestic violence
- partnerships between institutions in the heritage sector and beyond as well as collaborations with local communities (often with emphasis on health, well-being, justice and sustainability)
- learning from solidarity, empathy and resilience as emerged during similar situations in the past (e.g. physical catastrophes) or societal topics (e.g. human rights, conflicts and other)
- reconsideration of accessibility standards and procedures
- collection and documentation of the current crisis and its impact
- reflection on the COVID-19 experience and revisiting priorities, strengths, weaknesses and practices possibly transforming the future of organisations
- advocacy initiatives by the sector’s bodies in order to secure funding and pro-
tection for organisations.

Within these overall priorities, heritage associations launched further guidance on the use of online provision to reach and support audiences during the health crisis. Some of the suggested means of remote engagement were (International Council of Museums 2020a; Ciecko 2020; Network of European Museum Organisations 2020a):

- access to online collections via digital copies or artwork (often through Open Access), exhibitions and more
- creating online tours via commonly used social media platforms such as Facebook, Instagram Live, Pinterest curated content, Twitter threads, YouTube Live
- podcasts to facilitate audio tours of exhibitions, discussions about the collections and analysis of interesting topics
- blog posts and stories about a variety of collection related topics and beyond
- social media campaigns, challenges and quizzes - often with a humorous spirit
- using hashtags to encourage people to share their stories (e.g. #MuseumFromHome, #BetweenArtandQuarantine)
- live streams of educational activities, creative sessions, story times and more through social media and other live event platforms
- virtual tours such as Google Arts and Culture 360-degree museum tours
- VR/AR experiences and 3D object exploration

The above suggestions along with practical examples were proposed in order to support audiences by providing informative, educational and creative activities in the periods of lockdown and at the same time de-formalised the strong object/collection focus that often structures digital offerings.

2.2. Related work: Collecting data from institutions

As heritage institutions reacted rapidly and adapted their online presence and digital offerings, several funding and regulating organisations initiated efforts to record the pandemic’s impact on the sector. Surveys that directly asked museums and memory organisations about their digital provision offer some context for understanding the practices documented in our study.

The Heritage Fund launched one of the first surveys in the UK in April 2020 aiming at identifying the sector’s needs. Institutions were asked to respond to questions about the digital skills of their staff and the uses of digital technology they would like to explore. Intermediate results from 162 heritage organisations in the UK demonstrate that their top three priorities comprise usage of technology for a) marketing, fundraising and communication purposes; followed by b) content development; and c) community building online (Heritage Fund 2020).

Research commissioned by the Art Fund (UK), gathered responses from 427 museum professionals through surveys, interviews and focus groups between April and May 2020. These findings demonstrate that 86% of organisations boosted their presence online. Less than half of the organisations have reported increased numbers of visitors to their websites, but there seems to be significant increase of engagement through social media. Even though there was a rush to release new content online in the first stages of the lockdown, many institutions are now developing strategic plans for their digital presence. However, in many instances there is lack of expertise and some museums feel left behind in the digital world. Some of the key outcomes of the survey with respect to future digital developments point out the need to find new ways to
generate income. The survey also indicated that there is significant interest in opening up collections and reaching audiences by producing new online content (Art Fund 2020).

At a European level, the Network of European Museum Organisations (NEMO) released the results of a survey that took place between March and April 2020 with responses of around 1000 professionals from museums in 48 countries. NEMO’s report highlights the heavy financial impact of COVID-19 on museums; the increase of digital services reported by four out of five museums, often achieved by asking staff to undertake new responsibilities; and an increase in online visits directly connected to the increase of digital offerings. In this survey, museum officers reported that social media, educational material, videos and films and collection related content were amongst the most popular ones for audiences. NEMO’s report concludes by emphasising the need to invest in digital services, infrastructure and digital skills acquisition (Network of European Museum Organisations 2020b).

Finally, global reports from the International Council of Museums (ICOM) and the United Nations Educational Scientific and Cultural Organisation (UNESCO) evidence that the sector has been strongly impacted by financial loses with fears of permanent closures. Institutions’ reaction to the crisis was however fairly quick, and many put efforts into their digital profile. In addition to redeploying existing material, many institutions reported that they had transferred scheduled programmes and events to the digital sphere; increased their digital offerings with social media content (46%); launched quizzes, contests and challenges (19%); organised live events (19%), online collections (18%), online exhibitions (16%); and released newsletters (13%) and podcasts (10%). The initiatives that have been mostly introduced after the lockdown were live events (12%) and online exhibitions (11%) according to the report (International Council of Museums 2020c). Some organisations emphasised the educational character of their content and its use in supporting parents to entertain and teach children at home, or the introduction of online participatory actions through social media. However, the reports illustrate the lack of dedicated resources (staff and infrastructure) to develop the digital presence of institutions and hence a digital divide between developed and developing countries and in some instances a gender gap in accessing online content (UNESCO 2020; International Council of Museums 2020c).

All the above reports are valuable sources of information to understand the overall impact of the COVID-19 crisis on the heritage sector, as it was self-reported by the sector. Along with more general information, the reports analyse aspects of the digital offering types that were prioritised during lockdown, based on institutions’ professional voices. The current research complements these projects by investigating the offerings from the point of access or the user perspective. It investigates the digital offerings of a range institutions in the UK and USA to analyse deeper the digital offering “trends”; it examines the offerings themselves as highlighted on memory institutions’ websites, complementing the professionals’ voices; and looks at the digital offerings through the lens of changing audience needs to illuminate further aspects of the COVID-19 heritage response.

3. Methodology

The current research set out to investigate the response of the heritage sector in the UK and USA to COVID-19 by identifying the digital offerings that were available during the period of the pandemic closures. By doing this, we aim to respond to research
questions that were framed as follows:

- What kinds of web-based digital provision was highlighted as available to audiences during the lockdown period by UK and USA memory institutions?
- What are the audiences that digital provision was targeting?
- Did different types of memory institutions prioritise different offerings?
- What types of content did memory institutions deploy? Text-based or more complex spatial-visual types of content, including Virtual Reality and panoramic images?
- Was digital provision used by memory institutions in response to the financial crisis as emerged from the pandemic?
- How have memory institutions kept content relevant to vulnerable communities and societal challenges, including isolation, mental well-being, accessibility and inclusivity?

In order to respond to the above questions, the collection of data included the survey of memory institutions’ websites in the two countries. In total, we surveyed 83 memory institutions in the UK and the USA (48 in the UK and 35 in the USA). The sample included major institutions from both countries (e.g. based on visitor numbers from Wikipedia) (Wikipedia 2020) plus smaller civic, historic and/or city museums to represent a range of size and function of organisation. The museums were mainly drawn from the membership of the National Museums Director Council members’ list in the UK (National Museum Directors’ Council 2020) or the American Alliance of Museums. For some memory institutions, which are aggregated under an “umbrella” trust, we surveyed the umbrella organisation as in most cases this presented the overall COVID response.

All data were recorded from April the 23rd 2020, only one month after the UK went into lockdown, until the 31st of July 2020, a few weeks after museums and galleries were allowed to reopen to the public in the UK. Both data collection and analysis was realised by an interdisciplinary team of researchers, providing in this way further validity through “investigator” and analyst triangulation for the research.

When surveying, researchers followed a strategy to identify what digital offering deemed as COVID-19 response, as opposed to traditional website content (e.g. top menus). In some cases institutions re-purposed or sign-posted existing content as being COVID-19 relevant. This is not surprising given how memory institutions fulfil a role that is already related to the educational, well-being, and self-improving needs of communities. Thus, many organisations restructured their content to address the pandemic by creating COVID-19 “highlights” or “sliders” on their front pages. These new pages allowed users to reach a variety of relevant content instead of accessing it through the traditional website menus. The variety of COVID-19 resources in institutions was vast, and researchers followed these highlighted routes to identify which digital offerings were relevant for the survey.

It was not possible to identify the impact that the digital offering had on users in terms of visitor numbers. We did not seek access to museums’ web data (however this is partly evidenced by institutions’ staff surveys as described in section 2.2). Exceptions are the number of views on websites such as YouTube, followers in social media, or the number of downloads in sites such as SketchFab. Yet, these are difficult to directly relate to the COVID-19 response, as content may have already available before the lockdown. Instead we undertook a different approach by recording all digital offerings’ corresponding URLs for later analysis.
In order to offer a meaningful classification of the results, we adopted different classifications and sub-classifications of the content including: the types of digital offerings, the type of COVID-19 audiences, the type of content, the type of memory institutions and types of donations that institutions were requesting during this period. These are described below.

3.1. Digital offerings classification

An important task that enabled us to capture meaningful data was to design an appropriate classification for digital offerings. This classification had to facilitate us to record the kind of activity offered to visitors during the COVID-19 lockdown period, even though the content was not necessarily specific to COVID-19 concerns. Thus, the classification was generic to deal with a variety of offerings by memory institutions. Table 1 shows the classification, which categorises offerings into seven types: collection, virtual visit, learning, home activities, events, funding and communication. Inevitably, there are certain overlaps between different types, as access to a collection could enable learning or be a home activity. However, we categorised digital offerings under the most obvious type, while deploying a set of subtypes that further refined the classification process.

Table 1 also records the subtypes we designed to further classify digital offerings. This was particularly important for understanding the types of access to collections or exhibitions being offered, the types of events memory institutions organised, the types of communication strategies they used during this period, types of home activities and more. For instance, subtypes of the “Collection” type digital offering could include: free database exploration, guided exploration, collection related resources, 3D collection, image database/resources as well as collecting content. The latter was particularly interesting as some memory institutions set to actively collect digital content or objects from the public during the lockdown period to document the COVID-19 impact on communities including the anti-racism protests of June and July 2020.

3.2. Types of content

To further understand what the digital offerings consist of, the survey recorded a description for every offering as well as the type of content. Even though most web pages comprise text and image elements, the survey included information about more complex data types, such as video (including live video stream), audio, interactive games and activities, 3D objects explorations, 360-degree virtual tours and interactive panoramas/VR/AR type experiences. The visual types of content are of particular interest, as they allow audiences to engage more actively with the digital content. Besides being a popular type of content, visual content has some advantages for audiences, such as being more inclusive to multiple understandings and interpretations, as well as overcoming some communication barriers. However, it can also be less accessible for those with disabilities if the content has not been designed appropriately.

3.3. COVID-19 audiences

As a means to understand the audiences that the digital offerings from heritage institutions targeted, we deployed an audience segmentation that was devised for the COVID-19 pandemic. Although it might have been possible to adapt an existing seg-
<table>
<thead>
<tr>
<th>Digital Offering Type</th>
<th>Subtype</th>
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<tbody>
<tr>
<td>Collection</td>
<td>Free database exploration</td>
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<td></td>
<td>Guided exploration</td>
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<td></td>
<td>Collection related resources</td>
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<td></td>
<td>3D collection</td>
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<td></td>
<td>Images database/resources</td>
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<td>Collecting content</td>
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<td>Virtual visit</td>
<td>Gallery tour</td>
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<td>Audio tour</td>
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<td>Learning</td>
<td>Educational material</td>
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<td>Home activities</td>
<td>Creative activities</td>
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<td>Wellbeing activities</td>
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<td>Events</td>
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<td>Other event</td>
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<td>Competition</td>
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<td>Funding</td>
<td>Commercial venture</td>
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<td>Communication</td>
<td>COVID-19 communication</td>
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<td>Podcast</td>
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<td>Blog/articles' section</td>
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<td>Social media</td>
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<td>Videos</td>
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<td>Student/artist resources</td>
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<td>Racism related</td>
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<td>Practical info</td>
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<td>Digital publications</td>
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<td>Practical info</td>
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<td></td>
<td>Music lists</td>
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<td>Other communication</td>
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Table 1: Digital offering types and subtypes used in the survey
mentation model (Drotner et al. 2019), we adopted Jones’s (Jones 2020) COVID-19 audience segmentation. This segmentation takes into account the shift in the character of audience needs to prioritize the distinctive emotional and social needs created by the pandemic and by the condition of “lockdown” or “shelter in place” in particular. By adapting Jones’s classification we distinguished between the needs of three groups of audiences, which are then further classified into distinctive types:

- **Audiences seeking learning support**: Traditional audiences of memory institutions where the emphasis is on formal and informal education, including supporting online learning, reflection and thinking. Examples include teachers, eager learners, parents doing homeschooling.

- **Audiences seeking emotional support and entertainment**: Emphasis is on those who are seeking content or activities (e.g. arts and crafts activities), which might provide benefits including relaxation, well-being, and support to process what is happening around the world as well as in their personal lives. Examples include bored people, stressed out/scared people, workers (both working at home and those having to go to their workplace), lonely people and those wanting to help others.

- **Stakeholders who wish to keep involved**: Emphasis is on those audiences which are critical for the operation of an organisation or who depend on it. They seek to understand how the pandemic is affecting the organisation, themselves and how they can offer support in this process. These audiences include internal audiences, museum constituencies (e.g. core audiences for content), museum members or donors, and the local community.

3.4. **Sample selection**

The survey included a variety of memory institution types as illustrated in Figure 1. Some institutions were more difficult to categorise due to the variety or particularity of their collections. In this case we opted for the most prevalent type or grouped them under one category (e.g. maritime/military museums). The data recorded for each museum also included the city and country where the museum was located, as well as a Wikidata code so that more information could be retrieved at a later stage.

3.5. **Funding and donations**

Given the severe financial impact of COVID-19 on heritage institutions as also highlighted by major sector organisations (see Section 2), the survey recorded data regarding funding and calls for donations. Thus, although many institutions normally request donations, the survey specifically recorded calls for donations in relation to the COVID-19 crisis (e.g. emphasised by messages about the current crisis and urgent need for support). The overall data that were recorded about funding included i) calls for donations emphasising (or not) COVID-19, ii) calls to support through other means, such as shop purchases, memberships or gifts; and iii) no visible calls for funding and donations.
3.6. **Other data**

Beside the previously described types of information, data was also recorded - when available - regarding the author and date of creation of the digital offering, its URL and any additional comments which could facilitate a further qualitative analysis of findings.

The following section presents and analyses the resulting data.

4. **Findings of survey**

The analysis of data allowed us to explore in detail the digital offerings of memory institutions during the COVID-19 lockdown period. Specifically, our questions are related to: 1) the types of digital offerings which were available to audiences; 2) the types of audiences these offerings targeted; 3) the offerings that different museum types prioritised; 4) the nature of the offerings’ content; 5) the financial support sought by museums during the crisis; and 6) exploring how the digital offerings matched needs that emerged during the COVID-19 pandemic in particular with regards to vulnerable communities and societal challenges, including isolation, mental well-being and inclusivity.

A total of 922 digital offerings were recorded as providing relevant content for the COVID-19 crisis amongst the sample of 83 memory institutions. This includes a total of 515 digital offerings in the UK, and 407 digital offerings in the USA; with an average of 11 digital offerings per memory institution. We reiterate that not all of this content was newly created, but could have been restructured and highlighted as relevant to the perceived needs of audiences during the lockdowns.

The following subsections present the analysis of data regarding the surveyed memory institutions, types of offerings, audiences, financial issues and types of content as they emerge from the research questions.

4.1. **Memory institutions surveyed**

As Figure 1 illustrates, the survey included a mixture of institutions ranging from History/Historic house or place (18%), Art (14%), Art and History (12%), Polythematic (10%), Museum Trust (8%), Special Theme (8%), Science (8%), Maritime/Military (8%), Natural History (7%), and Library/Archive (5%). Within this variety of institutions, there are representatives of different types of collections, galleries, exhibitions and historic environments; all of which can be mediated by digital offerings.

Figure 2 presents the number of digital offerings recorded for each type of memory institution. On average, History/Historic houses provided 10 offerings each, Art institutions provided 12 offerings, Art and History institutions provided 13 offerings, Polythematic institutions provided 14 offerings, Museum Trusts provided 9 offerings, Special Theme institutions provided 10 offerings, Science institutions provided 11 offerings, Maritime/Military institutions provided 11 offerings, Natural History institutions provided 12 and Library/Archive institutions provided 12 offerings.

4.2. **Digital offerings**

With regards to types of digital offerings, Figures 3 and 4 show a comparison between the number of digital offerings in the UK and the USA classified according to their


Figure 1.: Types of memory institutions surveyed

Figure 2.: Number of digital offerings provided by different types of institutions

type and subtype. Digital offerings of Collection and Communication type were the most popular in both countries. Both represented 71% of the total offerings.

For the UK, Collection type of digital offerings represented 29%; while Communication type represented 42% of the total offerings. For the USA, Collection type of digital offerings represented 25%; while Communication type represented 45% of the total offerings. Some of this provision was likely already in place before the COVID-19 pandemic so represents a continued and possibly adapted form of provision. Some particularly interesting Collection related resources - apart from standard online exhibitions, collection presentation and search - were calls to document the COVID-19 impact on people’s lives by collecting digital content from audiences [National Portrait Gallery 2020; Ella Sharp Museum 2020]; by collecting physical objects that represent the pandemic crisis (Museums Sheffield 2020); or even by setting a number of tasks for people and then create a time capsule based on this input (York Museums Trust 2020).

As for Communication offerings, memory institutions actively sought to keep in contact with audiences, though communication efforts seem slightly more energetic in the USA. In general, memory institutions seem to have responded well to advice (see Section 2.1) to keep communication with audiences via digital tools and platforms, for example blog content, social media material, videos, podcasts and more. In this type of content too, there were some noteworthy resources that demonstrate the effort of
institutions to keep relevant to the community for example by responding to the Black Lives Matter movement (Greer 2020; Wali et al. 2020; National Gallery of Art 2020); or by trying to incorporate people’s voices with respect to future digital strategies (Historic Alexandria 2020); and reopening plans (Black Country Living Museum 2020; Bristol Museums 2020).

Less frequently offered were actual Virtual visits - in the form of 360-degrees visits, VR/AR experiences or audiotours - representing only 2% of the offerings in the USA and 3% in the UK - making these the least common type of digital offering for both countries. It is interesting that so few virtual visits were offered, despite the fact that audiences could not physically visit memory institutions. Given the contextual information offered by professional association surveys, the biggest barrier for this was the lack of funding and infrastructure for the creation of such experiences. Few museums had already explored virtual visits’ opportunities through collaborations with Google Arts & Culture Street View panoramas (Google Arts and Culture 2020a,b) or in-house productions (Frank Lloyd Wright Foundation 2020b; Birmingham Museum and Art Gallery 2020). Other offerings which were provided in the form of virtual visits include: exhibition tours such as the last minute video with the curator of Michelangelo’s exhibition at the Getty Center, recorded just before the museum’s closure (The Getty 2020); live events to go through indoor or outdoor spaces of an institution during the lockdown (Vizcaya Museum and Gardens 2020c); recorded videos demonstrating galleries, conservation spaces, museum gardens and more (Kew, Royal Botanic Gardens 2020; Archaeology Alexandria 2020).

For most offering subtypes, the comparisons between the UK and USA show that there are only minor differences between the countries; with percentage differences of less than 3%. Some exceptions include Guided explorations, which constitute 11% of the offerings in the UK and 8% of the offerings in the USA; free database exploration which are 7% of the offerings in the UK and 4% of the offerings in the USA; and Live
events which are 3% of the offerings in the UK and 6% of the offerings in the USA. **Provision by different types of memory institutions:** More significant is the correlation between institution type and offering type. Figure 5 cross-relates the number of offering types with the different types of memory institutions which provided them. Again **Communication** and **Collection** offerings are the most popular ones for all types of institutions. History/Historic Houses or Places seem to have relatively high provision of **Events** and content related to **Learning. Home activities** including well-being activities were mostly provided by Art institutions and Art and History museums, which also offered the highest number of **Virtual visits** and solicited **Funding** through commercial streams.
4.3. Audiences

Figure 5 shows the digital offerings for the three distinct groups of audiences: educational needs (left), emotional needs (centre), stakeholder involvement needs (right). Furthermore, Figure 6 presents the offerings targeted to specific audiences by each type of memory institution both in the UK and the USA. These data demonstrate that for each type of audience, the most popular offerings both in the UK and the USA were as follows:

Audiences seeking learning support: those seeking support for informal and formal learning were able to access digital offerings, including guided exploration of the
Digital offerings provided by different types of memory institutions and targeted to different audience types

Figure 7.: Digital offerings provided by different types of memory institutions and targeted to different audience types

collection (251 offerings), educational material (145 offerings) and collection related resources (192 offerings) as the most frequent digital offerings. The sum of these three most frequent offerings represents 64% of the total offerings recorded for this specific audience.

Those seeking learning support was the most benefited by the digital offerings of memory institutions during the lockdown period. This is somehow not surprising given the guidance by international bodies on prioritising access to the collection (International Council of Museums 2020a); as well as the importance memory institutions place on those traditional audiences who seek opportunities to gain new knowledge.

**Stakeholders who wish to keep involved:** those audiences, who are key stakeholders of memory institutions, were offered mainly COVID-19 communication (227 offerings), blog content and articles covering a variety of topics (28 offerings), and practical information (30). The sum of these offerings represents a 31% of the total offering for this specific audience, making them the second most benefited type of audience.

Most communication related to COVID-19 involved statements about the museums’ temporary closures, as well as updates about the response of the museum, and future plans for reopening. Other offerings provided further information on how to financially support memory institutions during this difficult period. This type of offering will be further discussed in Section 4.5.

It is of interest that some institutions were also able to develop material responding to existing social issues that were intensified by the COVID-19 pandemic, specifically the Black Lives Matter movement in the UK and the US. Only the nation-
ally funded museums (Smithsonian Museums, Tate, National Archives), US museums with substantial endowments (MoMA, Getty, the Met) and larger civic museums in the UK (especially those in cities with recognized relationships to slavery including Bristol, Manchester, Liverpool) recorded communications and content in relation to anti-racism, support for Black Lives Matter, or announcements of alliance with black communities. Whether these communications primarily reflect the organisations’ resources for engaging with ongoing social developments during the pandemic, or they underline the nature of the relationship between these museums and their audiences, is hard to determine from existing data. But certainly these developments are suggestive and invite further exploration.

**Audiences seeking emotional support and entertainment:** those audiences seeking emotional support were able to access digital offerings, including social media (44 offerings), live events (58 offerings) and creative activities (44 offerings). The sum of these three top offerings represents 16% of the total offerings recorded. Well-being activities (49 offerings) are also of relevance to this audience, which represents 5% of the total offerings recorded for this specific audience.

Overall, the provision for audiences seeking emotional support and entertainment was the most modest when compared to the other groups. This is regardless of being identified as a priority activity by international bodies (see Section 2.1). Also, there is little evidence of how the digital provision responded to societal needs and current developments by reaching or engaging with vulnerable groups such as the homeless, people suffering from dementia, children who cannot access easily education, refugees, minoritized groups and women experiencing domestic violence. Some vulnerable or excluded people were the focus of special activities such as the National Gallery of Art’s “Connecting through conversation” programme that provided online resources for those with memory loss or intergenerational groups. These audiences are most obviously underrepresented as the targets for digital offerings, probably because these groups are traditionally seen to benefit from direct social or object contact - suggestively, we have also seen the emergence of relevant research efforts that seek to investigate whether online heritage experiences can help vulnerable groups, such as those suffering from chronic pain and mental health issues (Oxford 2020; Culture Health & Wellbeing Alliance 2020). Digital provision catering for disabled audiences during the COVID-19 crisis has proved very limited (National Galleries of Scotland 2020) and the question of digital accessibility for particular groups because of the pandemic is one that deserves further investigation: has the removal of physical access also removed barriers? Or has it just introduced new ones?

Art as well as Art and History institutions, amongst others, provided well-being activities as part of their digital provision. Examples include downloadable art tutorials, colouring sheets, crafts, guided mindfulness, meditation and relaxation related to art (Vizcaya Museum and Gardens 2020b; Crocker Art Museum 2020; Tate 2020; Ironbridge Gorge Museums 2020). Two particularly interesting examples of offerings for audiences seeking emotional support come from polythematic museums. The first example that further recognises the difficulty in accessing online material that some audiences might encounter, are the physical activity packs which were offered by the Exeter Royal Albert Memorial Museum & Art Gallery to shielded, vulnerable and isolated people in the city to help ease lockdown and improve well-being and mental health (Exeter Royal Albert Memorial Museum & Art Gallery 2020). Moreover, the Manchester Museum developed a “Cultural First Aid Kit” focusing on well-being for people in hospitals, care centres or at home (Manchester Museum 2020).

Live events represented an interesting offering, given the increase already recorded
by relevant surveys about this type of offering (International Council of Museums 2020c). The majority of these events were free to access. The live (online) events which were surveyed included virtual choirs and music performance, book clubs, cooking demos, panels and live talks with curators and guest speakers, art sessions, and webinars on the COVID-19 crisis as well as some well-being and art mindfulness sessions mentioned above.

4.4. **Type of content for audiences**

Data was also analysed to further explore the nature of the offerings’ content in terms of the most popular data formats. Figure 8 presents the number of offerings per each type of content classified for each digital offering subtype. For the visualisation of the data, we discarded textual content as this was the most dominant type for each category of offerings. Instead, we sought to understand other types of content offered to audiences. As Figure 8 illustrates, images and video were popular content types being available in 72% and 26% of the digital offerings respectively.

Images were particularly relevant for guided explorations of collections, blogs, and collection related resources. Video was relevant for guided explorations of collections, educational material, and collection related resources. Interactivity, in the form of games and activities, was popular for offering creative activities and educational material. 360-degree virtual tours were offered mostly for gallery tours. In our sample, only 20 offerings of 360-degree gallery tours were recorded, constituting in this way a very small percentage (2%) of the total offerings. Finally, 3D objects were offered as part of 3D collections as well as content for guided explorations, and collection related resources. Their availability represented 1% of the total digital offerings, making this the least frequently offered type of content.

Sketchfab was the most popular platform for offerings of 3D collections of museum artefacts. Some examples highlighted during the survey were the British Museum (UK) and the Science Museum (UK) accounts (The British Museum 2020; Science Museum 2020), amongst other museums that provide access through this platform. Other examples include an interactive visualisation of terrestrial laser scanner data for exploring spaces that cannot be physically entered (Vizcaya Museum and Gardens 2020a) which is shown in Figure 9 and a game based on 3D models for learning how scientists classify different features of animal skulls to identify their origins (Museum of Science 2020).

4.5. **Funding and donations**

Given the financial impact of the COVID-19 crisis on the heritage sector because of the closures of institutions and the urgent calls for financial support, we explored further funding and donation related information. Hence, data were collected to investigate whether memory institutions highlighted donation calls to their audiences or even took steps to address this issue.

Figure 10 presents data illustrating those institutions which highlighted the need for donations because of the COVID-19 crisis. In total, 44 memory institutions (53% of the total) included in their provision urgent donation calls emphasising mostly the COVID-19 crisis. A further 35 (42%) had calls to support the institutions through other means, such as shop purchases, memberships or gifts.

Furthermore, with the *Funding* type of digital offering, we sought to record different
Figure 8.: Types of content made available by institutions both in the UK and the USA
types of commercial ventures which might have generated income during the lockdown period. Digital offerings of this type represented only 4% of the total of offerings recorded by both countries (5% of the total offerings in the UK and a 3% in the USA). However, it must be noted that other offerings, such as education related events (i.e. virtual summer camps) incurred a cost which might have provided additional sources of income for institutions [Field Museum 2020] [California ScienCenter 2020].

The relatively small number of commercial offerings might suggest that memory institutions would benefit from further effort on developing income generating marketing strategies. A variety of funding strategies will certainly complement governmental and other type of funding to help them during these difficult times. Nonetheless, some
institutions did explore funding streams that could make up for the part of the lost income during lockdown. Standard examples of commercial offerings included online shops and artwork printing services. Some other interesting examples of commercial ventures included selling recipe boxes with ingredients and instructions to prepare food at home offered by the Birmingham Museum & Art Gallery (Birmingham Museum and Art Gallery 2020) (see Figure 11); providing genealogy research services by the curators of the Statue of Liberty-Ellis Island Foundation at a cost (Statue of Liberty-Ellis Island Foundation 2020); selling COVID-19 related items in museum shops, such as cards of artworks with figures wearing face masks and face masks from fabric with famous artwork prints (Detroit Institute of Arts 2020; Fitzwilliam Museum 2020) (see Figure 12); and learning events as the ones mentioned above (Field Museum 2020; California ScienCenter 2020).

5. Discussion and conclusions

This paper presented research on recording and analysing the digital provision of memory institutions in the UK and the USA during the COVID-19 crisis. The research followed a rigorous methodology which identified a sample set of institutions in both countries and recorded the digital provision during the strict lockdown period. Based on this, the paper presented an analysis of the digital offerings’ types and subtypes; their provision according to institution types; the type/format of content involved; as well as the audiences which these offerings targeted. Additionally, the analysis looked at issues such as funding and efforts placed towards addressing societal needs including the most vulnerable audiences. The contribution of the research is that it provides an in-depth understanding of the heritage sector’s response to the COVID-19 crisis.

The research demonstrates that most efforts from memory institutions were placed on providing a variety of offerings for audiences who already have an interest on the
institutions’ collection and related activities. In particular, memory institutions have adapted or increased their communicative capabilities with their existing audiences, while trying to attract further audiences online. Many of the communication offerings have used collections as prompt for events, activities, discussions and more. However, there is great potential in trying to explore better ways to link communication offerings and digitised collections not only to enhance interest for the collections themselves but also to make them more relevant to the society while strengthening its bonds and building resilience through engagement with heritage.

There is also evidence of memory institutions engaging with less traditional audiences – in particular those whose needs are closely linked to the societal developments during the pandemic (people isolating, people with dementia, anti-racism activists and more). The digitisation of collections sometimes plays an evident role in types of offerings targeting such groups, while other times it is more subtle. This happens as the offerings of the arts and culture sector often go beyond mere engagement with artefacts. This is further evidenced by how institutions relied on a variety of digital tools, such as live streaming and other social media platforms, to keep in contact and remain present in the lives of audiences within their communities and across the world.

Moreover, the research identified that while a great deal of resource has been directed to providing digital access to museum/memory collections information, there is potential for enhancing the usability and value of that material in the following ways:

- Directing more focus towards vulnerable audiences in order to address their needs. In such efforts, it would be important to take into account the interest, requirements and digital capabilities of these audiences to avoid digital exclusion.
- Investing more effort in producing virtual visits. This would involve understanding what is required in terms of virtual visits from audiences which cannot physically access the institutions. Further exploration on how virtual visits could target different audiences, or use diverse platforms, should be explored.
- Consideration of best practice around monetising digital offerings. Some organisations have been extremely creative in terms of offering paid-for services via remote platforms including events, research services, offerings for home-activities as well as artwork related products. What are the ethical and commercial considerations that should guide museums in the development of commercial online activities?
- Developing collaboration strategies at a local level or beyond to enhance the resilience both of institutions and audiences. As the data show, there have been very limited collaborations between institutions that do not belong to the same Trust [Frank Lloyd Wright Foundation 2020a], highlighting the lack of a sector-wide integrated approach.

All of these points refer us back to an issue flagged in the sector surveys (see Section 2.2) and which is to some extent evidenced in the current research, which is that more training/skills are required to fulfill the novel digital requirements [Parry et al. 2018]. This might become more urgent as freelancers - who were often developing digital offerings - have been amongst the first groups who stopped working for institutions and in-house staff have had to adapt to the situation and undertake new “digital” responsibilities. This means that new digital offerings do not always make best use of the potential of the platform, as Figure 8 demonstrates. How will the new “normal” of remote engagement shape the future of museum workforces and staff relations?

Most importantly, What is clear from this research is that through the COVID-19
pandemic the sector has identified audiences and needs with which memory institutions want to engage through digital resources and mechanisms: these include anti-racism activists, audiences characterised through their social condition (lonely, bored) rather than their identity or interests, and those for whom digital may not be an easy or obvious means of communication. Can the content, or the aspirations that produced it, created during the lockdown, have a legacy beyond this time?

These questions now need to be explored by investigating how audiences have engaged with the institutions’ digital provision. While there are no agreed methods and metrics to measure digital engagement in this field, the answers to our questions lie within the relations between audience and organisation, between host and user. (Network of European Museum Organisations 2020b). These are dynamic relationships but the conditions of the pandemic have demonstrated one thing above all, which is that this dynamism at its best is engaging and challenging. Given the mechanisms to share our learning it will also seed the potential for a generative phase in the history of memory institutions and their digital offerings.

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