

Responding to Open Access: How German Museums use Digital Content

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Abstract

Museums are under increasing pressure by funders, governing bodies and audiences to make their digital content openly available. This paper explores museums' reactions to the call for open access and looks at how museums currently utilize their digital content. Based on an analysis of qualitative interviews with museum officials in Germany, we have found museums to follow four different strategies: public engagement, safeguarding heritage-related knowledge, promoting research infrastructure and achieving marketing goals. These differing strategies reveal that museums aim for different levels of open access and that they prioritise certain tasks in order to deal with conflicting expectations.

Key words: Museum strategy, digital content, open access, digital value, collection management

Introduction

Museums serve multiple functions in society, including safeguarding and providing public access to cultural content. Currently, museums are confronted with changing public expectations of how to use and offer this content. By means of digital technologies, objects in collections and exhibitions are no longer exclusively accessible on-site or stored in collection databases as digital reproductions; now they can be openly distributed and made widely accessible via the Internet. In this regard, both political and social actors, such as the EU and the Open Knowledge Foundation have called on museums to make their digital collections openly available, though initiatives such as 'OpenGLAM' (Hahn 2013; Estermann 2016; Mruck *et al.* 2004). Museums have been increasingly expected to respond to these calls.

Against the backdrop of these calls, this study will examine how museums currently utilize their digital content and with what organizational and strategic justifications. For this purpose, we have conducted 21 qualitative interviews with German museum officials in charge of managing their museums' digital content, in order to address the following question: How do museums in Germany handle the utilization of their digital content given the growing demand for open access?

The museums' answers to these calls for open access might generate tensions with other museum tasks, such as the collection and preservation of objects (Walz 2016). When content, such as digital images of objects, is made freely available online, museums often lose their ability to frame, interpret and contextualize this content for the recipient, which historically has been one of their key tasks (Walz 2016). In order to handle such conflicting expectations, museums often try to adopt potential solutions from other organizations in their field or prioritize tasks on the basis of their organizational mission, resources and capacity. For this reason, this study aims to not only capture museums' specific practices of handling digital content, but also understand their strategic justifications and reactions towards changing expectations of their role in society.

First, we will introduce the social and political claims of the open access movement and then outline in more detail how these may challenge museums. Then, we will present current research on how museums handle open access and our research goals (Section 2). In section three, we outline our methodological approach, which consists of the content analysis of qualitative interviews. Ultimately, we identified four different ways museums utilize their

digital content. These show that museums focus on different tasks and show varying degrees of openness towards the demands of the open access movement. The different institutional approaches will be introduced in the empirical part of the study and illustrated with examples (Section 4). We conclude with implications for further research (Section 5).

Conceptual framework

Public calls for open access in museums

More openness in the provision of publicly funded content, such as that of museums, has recently become an important public issue. It has been sparked by technological and cultural shifts towards a 'digital knowledge society' (Castells 1996) and is being supported by relevant bodies, such as the open access movement. The latter first developed in the sciences, in response to the serial crisis in academic publishing, and soon emerged as a more general demand to make the content of public institutions more accessible (Hahn 2013; Estermann 2016; Mruck et al. 2004). Leading this charge are the 'Wikimedia Foundation', 'iRights' and the 'Open Knowledge Foundation' with its OpenGLAM (galleries, libraries, archives & museums) initiative, which encourages museums to make their digital content openly and freely available for everyone, with no constraints on its reuse¹. Further, a growing number of digitally savvy museum visitors have asked museums to provide free cultural content (Bayne *et al.* 2009).

In addition to these grassroots initiatives, new legislation on transparency standards asks that cultural institutions make their collections and content openly accessible. The EU adopted the 'Public Sector Information (PSI) directive'² in 2003, a guideline which calls on public sector information to be made openly and freely available. This demand was broadened to include research data (in 2011) and cultural content (in 2012). In 2016, the EU adopted the 'European charter for open access to research institutions' (European Commission 2011, 2012, 2016). These guidelines are backed up by the international 'Budapest Open Access Initiative'³ of 2001 and the 'Bethesda Statement'⁴ of 2003, which public institutions have adopted on a voluntary basis. In Germany, the 'Joint Statement by German Science Organizations: Open access and copyrights'⁵ was adopted with the direct participation of museums. Furthermore, many research institutions and museums in Germany have agreed to the 'Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities'⁶, which demands open provision of their research content (Hahn 2013).⁷

Many museums provide digital content on their own websites and databases or share them via other platforms, websites, wikis or blogs. This study conceives of digital content as digital facsimiles of original cultural assets, such as photos, diagrams, audio and video files, and the meta information connected to it. The concept of utilization is understood as the process of using digital content or enabling its use. In this understanding, enabling its use refers to accessibility not only in the sense of public visibility, but also regarding options for further use, such as the changing of and adding to the digital content by third parties. As part of the call for open access museums are asked to provide open access to their collection while using licences that are set up as openly as possible, such as ones that allow commercial use for all (Berlin Declaration 2003⁸).

Content is made available in high or low quality, often supplemented by metadata. It can be offered for free download, with use-specific licensing fees or 'for viewing purposes only', depending on the target audience. Well-known non-commercial providers of museum content are 'Wikipedia'⁹, 'Google Arts and Culture'¹⁰, 'Deutsche Digitale Bibliothek'¹¹ and 'Europeana'¹². As these providers often use open licensing models, users can also pursue commercial goals in their use of the museums' digital content. On commercial platforms, such as 'bpk Bildagentur'¹³ and 'Artothek'¹⁴, content can be accessed via licensing fees that are calculated based on their intended use. Overall, the quantity of openly available digital content that museums provide for free or with free licences on their own websites, databases or external platforms can be regarded as an indicator of their openness towards open access demands.

Regarding the many meanings of open access outlined above, we decided to use the following metric in this paper: the level of open access is considered low if digital museum content is only made visible but not usable, or is accessible under multiple restrictions, such

as licensing fees, barriers to entry or conditions for further use. Museums that allow their content to be reused under certain restrictions, such as combining it with contextualizing metadata, are considered to provide a medium level of open access. If museums make most of their digital content openly available and under no restrictions of use, we define this as a high level of open access.

Impact of open access on museum practices

Museums' shift towards open access could challenge their other tasks and public mandates. According to ethical guidelines established by the International Council of Museums (ICOM 2013) and German standards (Deutscher Museumsbund 2006), museums are defined as sites of knowledge transfer and are responsible for archiving and researching material and immaterial cultural heritage. What one might call 'traditional' tasks of museums has long included the collection and preservation of cultural heritage and its respective research, documentation, exhibition and communication (Walz 2016). Collecting is defined as a systematic gathering, ordering and classification of objects, and is deeply embedded in social practices and imbued with cultural meanings, such as consumption and social structure (Bourdieu 1984; Meiners and Xylander 2012: 82; Pearce 1995). Museums are also expected to preserve their objects in a collection, which includes their safekeeping, conservation, registration and storage (Graf *et al.* 2012). Another central aspect of the work of museums is research into objects' provenance, histories and other contextual information (Walz 2016). Finally, museums fulfil an educational mandate through exhibitions and other forms of outreach (Noschka-Roos 2012) and offer a space for dialogue and debates on political and social issues (Hooper-Greenhill 2000; Simon 2010; Witcomb 2003; Vergo 1989).

The demand to make museum content openly available touches on many of the aforementioned museum functions. Apart from the communication departments, which have traditionally been responsible for engaging with audiences, nowadays collections and research departments are also expected to engage more actively with the public. These changing expectations may challenge traditional museum roles. For example, one such challenge may arise for departments that are responsible for research on, and the documentation of, objects. These tasks include providing information on an object's specific origin and other contextual information (Deutscher Museumsbund 2006). However, in contrast to objects in a physical exhibition or collection, digital content provided online can be easily detached from its information, leaving the museum without any opportunity to control how it is presented to the public by third parties. This could undermine the museum's ability to frame the interpretation of their collections, which is key to their maintaining their organizational identity (Walz 2016).

Furthermore, museums are challenged by open access demands with regard to ethical guidelines for museums (ICOM 2013; Deutscher Museumsbund 2006). Museums are responsible for the safekeeping of objects. Typically they publish photographic reproductions together with their associated metadata. However, once it is freely accessible, the museum might lose its direct control over further uses by third parties (Hagedorn-Saupe 2012). This can be problematic, especially with regards to culturally sensitive or politically charged objects. This is especially the case for objects and images containing religious symbols or depicting human remains (Bärnreuther and Schauerte 2012, ICOM 2013). Further, museums might experience damage to their reputation if popular objects from a museum's collection are poorly reproduced.

Other conflicts could arise from the ideology of liberalization and privatization of public institutions that encourage museums to act as commercial entities (Ames 1994; Gilmore and Rentschler 2002). Thus, calls for open access have to be weighed against the opportunities for monetary gain when utilizing digital content (Sanderhoff 2013). However, studies have shown that economic utilization strategies for museums' digital content are often not profitable (Fraunhofer Institut 2007: 131; Tanner 2004). Frequently, museums cannot even recover the costs of digitization through the licensing of their digital content. It is against this backdrop that a series of studies have compared different business models of utilizing museums' digital content (e.g. Bertacchini and Morando 2013; vom Lehn and Heath 2000; Li *et al.* 2012; Kotler and Kotler 2000). Finally, open access demands force museums to keep in mind specific legal

issues relating to copyright and personality rights surrounding objects in their collections (Allen 2009; Fouseki and Vacharopoulou 2013; Klimpel *et al.* 2017; Rinehart 2006; Petri 2014).

In recent museum research, digital technology's educational potential has been a main focus (Decker 2015; Jewitt 2012; Parry 2007, 2013; Tallon and Walker 2008). Research on open access in museums often deals with questions of social inclusion, such as democratic participation (Hooper-Greenhill 2000; Kidd 2014; Simon 2010; Stuedahl 2011), accessibility (Graham 2013; Hetherington 2000), and cultural representation (Marstine 2011; Smith Bautista 2013; Wohlfromm 2006). Closely intertwined are questions of whether and how digital content remains 'authentic' in relation to the original physical objects and how it changes the perception of heritage (Cameron 2007; Geismar 2018; Giaccardi 2012; Levy 2000; Lynch 2000).

A more limited number of studies have examined the internal consequences for museums when they digitally release their content. Most of them have been broad, quantitative surveys of American museums and GLAM institutions. Many of these studies focus on their motivation to the push for open access (Eschenfelder and Caswell 2010; Kelly 2013; Tanner 2004). On the one hand, they show that museums mainly have concerns about opening up in cases where the contextualization of their content cannot be assured or its reuse by the public cannot be controlled. On the other hand, they find that museums support open access because it increases their collections' prominence. In this context, a 'Mona Lisa effect' of digital reproductions has been postulated (Sanderhoff 2013: 135), which presumes that the iconic value of works can actually be increased by the distribution of copies. This contradicts Walter Benjamin's famous thesis that proclaimed a steady decline of the iconic or 'auratic' value of 'the work of art in the age of mechanical reproduction' (Benjamin 1980/1935; Witcomb 2003: 106).

Only a few studies can be found on the internal interpretations and implications of digitization and open access at museums. Some are discussed with regard to different working groups within museums (Bayne *et al.* 2009; Hylland 2013) and potential conflicts between them (Keene 1997), specifically regarding collecting (Conway 2000) and documentation (Cameron and Robinson 2007). These studies imply that museums see the increasingly open provision of digital content both with enthusiasm and concern, specifically regarding its effects on their reputation, working standards and their role in society.

This study aims to contribute to the literature on how museums interpret and react to open access demands, specifically as seen in the German context. Part of the study will focus on museums' actual practice. This practice is made up of museums' current and planned guidelines, as well as their interactions with different audiences in regard to digital content utilization. Through this, it is possible to deduce in what ways museums currently engage with open access. Furthermore, this study investigates the strategies for utilization that museums formulate themselves and how they may relate to their organizational identity and history. Finally, this study examines the parameters of utilization that museums refer to. This aims to cast light on which public expectations and political demands are relevant to museums, as well as how they perceive other museums.

Methodology

We have taken a qualitative approach to this study and conducted 21 structured interviews with museum representatives between February and June 2017. Participating institutions are located throughout Germany and include a range of different types of museums. The sampled museums differ in their thematic focus (e.g. culture, technology, natural history, art), illustrated in Table 1. Museums also differ in the way they are financed, including federal funding, state funding and private funding as shown in Table 2.

Thematic focus	Natural history	Technology	Art and crafts	Culture/history
Number of interviewed museums	03	04	07	07

Table 1: *Thematic focus of interviewed museums*

Founding	Federal	State	Mostly private
Number of interviewed museums	11	07	03

Table 2: Founding of interviewed museums

Further, the chosen sample reflects a wide range of museums in terms of their number of visitors.¹⁵ It includes eleven 'large' museums with more than 300,000 visitors per year, and ten museums with under 300,000 visitors per year. Lastly, the sample covers eleven museums with a pre-1945 history and ten museums that either emerged after 1945 or were entirely redesigned and have reopened since then.

The museums were asked to name a contact responsible for strategic decisions on the utilization of digital content, ideally in a middle management position. Using this approach, we were able to ensure that all interviewees held positions related to their museums' digital content activities. The sample included collection managers, as well as staff members concerned with digitization strategies and publicity. In consequence, their answers reflect the positions of their museums, or at least those of their specific departments and their views were not constricted by a one-sided professional focus on certain fields of activity¹⁶.

Our interview guideline was structured around the following themes which follow from our conceptual framework outlined above:

- 1) Practice of utilization: here we asked museums about their current and planned approaches relating to the utilization of digital content, including how they provide content to different audience groups and how they handle external requests for digital content. Further into the interview, we discussed target audiences and collaboration with platforms, commercial photography agencies and other partners.
- 2) Strategy of utilization: this section comprises all of the higher-level aims of museums with regard to the utilization of their content. We asked about the museums' specific goals as well as their perceived opportunities, risks or obstacles regarding the handling of digital content. Further, we enquired whether and how the museums' history, resources and perceived identity influence the utilization of digital content.
- 3) Parameters of utilization: in this section we asked museums whether, how and to what kinds of political and social demands for utilization of digital content they have reacted to. This includes the general expectations, guidelines and resources that museums perceive within their environment as well as how they perceive other museums.

To analyze our interview data, we used qualitative content analysis according to Mayring (2000) with the aim of constructing ideal types (Kluge 1999; Weber 1904). We coded the material inductively and deductively along our dimensions of analysis (practices, strategies and parameters of utilization) (Mayring 2000: 114).¹⁷ This enabled a systematic comparison between individual interviews and allowed us to generate four ideal types representing the different utilization approaches of the museums. Ideal types are theoretical condensations of the empirical findings used to reveal underlying structures of meaning mutually distinguishable from each other (Kelle and Kluge 2010: 111). The ideal types will be presented in Table 3 in the next chapter and supported by brief descriptions.

Empirical results

Ideal types of utilization approaches of museums

This section presents the empirical results on how museums utilize their digital content. We were able to define four ideal typical 'approaches to utilization'¹⁸ that systematically vary along three analytical dimensions of practice, prioritized strategy and parameters of utilization. Some museums follow one of these approaches, while other museums adopted multiple ones. Further, the approaches varied according to the working areas of the museums, as well as according

to the kind of digital content. The utilization approaches presented here are therefore primarily theoretical templates, which in practice are combined in modular ways.¹⁹

We called the four ideal typical utilization approaches: (A) public engagement, (B) safeguarding heritage-related knowledge, (C) promoting research infrastructure and (D) achieving marketing goals. Table 3 illustrates their main characteristics. It includes the three dimensions of analysis. However, it became clear during the analysis that the four ideal types also varied along three additional dimensions that can be found in the bottom rows of Table 3. First, they are connected to different self-understandings regarding their role in society. Second, they highlight different central mandates of museums. Finally, all of the utilization approaches could be matched with a certain level of open access.

Utilisation Approach	Public engagement (A)	Safeguarding heritage-related knowledge (B)	Promoting research infrastructure (C)	Achieving marketing goals (D)
Practice (Provision)	Open and free	Strict conditions on reuse	Open and free for research	Under fees
Prioritized Strategy	Recognition as promoter of participation	Recognition in documentation of collections	Recognition as promoter of research	Recognition of brand value, revenue
Orientation Framework	Public sector	Cultural sector	Research sector	Economic sector
Self-image	Laboratory of Knowledge	Archive of Cultural Assets	Research Institute	Cultural Entrepreneur
Prioritized Mandate	Open Access	Documentation	Research	Profitability
Degree of Openness towards Open Access	Very High	Medium	High	Medium

Table 3: Utilisation logics for digital content

Before we turn to a description of the four ideal types, it must be noted that all of the interviewed museums do utilize their digital content in one way or the other. None of them are completely averse to a free provision for external users. This is true for all four utilization approaches. The increasing public demand for open access is apparently already having an impact.

Instead, our analysis focuses on the distinctions regarding the museums' future plans to utilize their digital content. We also identified significant empirical differences in the prioritized strategies and parameters of utilization, which are both intimately linked to the organizational self-understanding of the museums as: (A) a laboratory of knowledge, (B) an archive of cultural assets, (C) a research institute or (D) a cultural entrepreneur. The self-understanding determines the stakeholders whose demands museums primarily try to address, e.g. from the political or cultural sector, and what other museums or organizations they find are most relevant to them. In the following, the ideal types of utilization approaches will be presented in more detail and illustrated with empirical examples.

Utilization approaches and empirical examples

Utilization approach A: Public engagement

This utilization approach is characterized by a pronounced openness regarding the provision of digital content. The long-term aim is to make all content available via open access, i.e. for free and without any conditions for its use. The means of provision include different open platforms, such as Europeana or Wikimedia, the museum's own website or the direct handling of individual requests. Museums that operate according to this approach see themselves as a laboratory of knowledge transfer and participation. Their highest priority of action is fulfilling the mandate of open access, which entails sharing digital content with the wider public and also allowing commercial use by third parties. By enabling open and easy distribution of their content, museums aim to increase their public visibility and to be involved in innovative processes, which strengthen public participation. It allows users to personally contribute to the body of cultural heritage knowledge, for example with citizen science activities²⁰. Further, these museums aim to connect with others internationally and to share experiences with the 'open community'. The point of reference is the public's wish for participation and, accordingly, their demand for open access. Therefore, the wider public, and especially Internet-savvy user groups, are considered as essential stakeholders. Strategies adopted by other museums with a leading role in the open access movement are seen as best practice to follow. As a major obstacle for the successful implementation of open access they see the lack of consistent and higher level in-house rules for their work with digital objects. Further, political regulations on the protection of personal data and copyright law are regarded as barriers to the completely free provision of digital content.

Empirically, eight interviewees follow this approach. This constitutes the biggest group within the sample. All of these museums pointed out that they count the provision of digital content among the core tasks of museums. The main aim is to make their content available to the public under open licences, and to this end, they often cooperate with non-commercial platforms, such as Wikipedia:

I would like to take on even more of a participatory approach [...] To work with as many platforms as possible. Open access, open access, open access. [...] Sharing as much as possible. And if you share knowledge, you also get so much back. In the moment when I start to share and everyone else starts to share, we also influence each other.²¹ (08)

Museums adopting this approach embrace the opportunity of knowledge flowing back to them through public participation. The following quote suggests that some museums in this group see themselves as a forum for the transfer and exchange of knowledge:

For us, the point is to make the collection freely available and reach a wide audience. Specifically, NOT in the commercial sense because we expect monetary gain, but to make our collection better known, to encourage people to participate [...] so that people can really contribute knowledge. (08)

Some museums also remarked that they model themselves on other museums that are seen as pioneers in the open access movement:

[...] it is also a conviction that is derived from our wish that people do something with our content [...] And create something new there. So we really were fascinated by the example of in fact the Rijksmuseum and also the Statens Museum in Copenhagen. (01)

However, only a small number of museums are completely open access. Many museums have only recently decided to open up and so far have not implemented this utilization approach entirely. One obstacle, especially for art and culture museums, is seen in the long duration of copyright protection²² for certain objects, which can currently sometimes prevent the provision of digital reproduction.

Utilization approach B: Safeguarding heritage-related knowledge

In this utilization approach, museums show certain reservations regarding open access and the opening up of their digital collections. Museums or departments operating according to this approach only distribute their digital content under strict conditions on their reuse. They only cooperate with platforms that enable them to directly control the conditions for content provision. Museums following this approach see themselves as archives of cultural assets. Their focus is on the documentation of their collections through means of editing and linking object information. The museums understand themselves as organizations acting in the cultural sector, not primarily as an economic, scientific or public actor. The comprehensive safeguarding of objects' contextual information gained through interpretative work and research is among their core aims. Museums in this group link the interpretation of their collections to narratives of local or national identity. Thus, local, regional or national publics are seen as important stakeholders. Further, prestigious national museums that link their digital content to high-quality metadata are seen as role models. Technical means, such as picture watermarks, are used to safeguard the digital content against undesirable use. Finally, staff members look to maintain contextual information because they feel it is within their professional responsibility, as the museums often include politically charged objects in their collections.

Four interviewees tended towards this utilization approach. Museums within this group expressed fearing a loss of control over the use of their content:

And then, when we reached the digital realm, there was the fear that now everything is freely available and everyone can do with it what they want and we lose control. (15)

Many of the museums showed hesitation towards the free provision of their content, unless it had been professionally edited with metadata. They preferred to keep all content interpretation and object contextualization under the museum's control in order to maintain high standards:

So, historical contextualization: if in the future you provide content through such portals and so on, it should be [the way] how museums put it together, earnestly and with scientific expertise. (15)

This quote also shows that some museums following approach B are concerned that their task of interpreting the objects might be challenged by the cultural shift towards open access. This viewpoint often implies that such museums decide not to use digital platforms that do not offer options to delete or update data, such as Europeana. Further, the museums noted that the commercial use of their content by third parties cannot be reconciled with their ethics and their reputation:

We have many objects that are, let's say, politically charged. And then you naturally have to reconsider if you want to and can publish them for commercial use, if this fits with our ethics or if we say 'No way this will happen'. So, like some poster with Adolf Hitler and the Nazi salute – that of course won't be commercially published. (10)

In practice, even the museums in this category cannot completely withstand the pressure towards a more open provision of digital content. Ultimately, they seek only to publish high-quality, edited data, even if this means spending more time on this. The following interviewee rejects what he calls a 'quick and dirty' provision of digital content:

I don't want to have anything to do with [such an approach], because nobody does a follow up any more. And then you have all these 'dead files'. So, we do it [provide digital content] with great care and work somewhat slower. [...] Our primary targets are scientists, colleagues; that is why we do this deep analysis. (19)

By protecting or controlling the quality, interpretation and designated uses of digital content, these museums demonstrate their organizational self-understanding as 'archives of cultural assets'. This prompts them to document their objects accordingly and by placing them clearly within a historical context, which becomes part of the object's presentation to the public.

Utilization approach C: Promoting research Infrastructure

This utilization approach is relatively open to publishing digital collections. The museums operating according to this approach usually have not yet made any concrete plans regarding the future utilization of digital content. However, digital content is made available publicly and openly, if it is required by external funding guidelines for research projects, or if there are political recommendations to provide open access to data generated by the museums' research. For example, they follow political guidelines such as the Berlin Declaration.²³ Thus, this utilization approach focuses on the free provision of digital content for science and research. From commercial users, in turn, they typically demand fees, reasoning that the provision of digital content to these users does not support the development of research. Museums' content is often delivered to different non-commercial platforms, such as Europeana, in order to comply with requests by research institutions. However, they do not rule out the option to be present on commercial platforms as well.

Museums adopting this approach see themselves as research institutes. The provision of digital content is regarded as a means to support further research. By this, museums try to contribute to the establishment of research infrastructure and networks. Hence, their frame of reference is the research sector (universities, research institutes, etc.). In consequence, the museums consider most relevant those stakeholders that are active in the promotion and funding of research (e.g. Deutsche Forschungsgesellschaft). Further, renowned research institutions, such as universities, are models for these museums. Finally, museums following this approach often demand very specific political guidelines on how to handle digital content.

Five of the interviewed museums adopt the utilization approach 'promoting research infrastructure'. Four of the five museums have, unsurprisingly, the status of German research museums, i.e. they are part of a non-university research network. Even though all of the interviewed museums mention that they accomplish research tasks, those in this group placed a special focus on it:

I mean, firstly, we do research. The museums are essentially an appendix that shows our research. (21)

Further, all of the museums emphasized that they regard themselves as research institutions at some level:

[This] is of course also a result of our institutional self-understanding as research infrastructure [...] The things that we keep and manage: we don't do this as an end in itself, but essentially as a basis primarily for research. (14)

Public research institutions, such as these museums, are also bound by certain requirements; for example, a regular evaluation of their research outputs and impact. Often, this also implies they are asked to freely provide their research data:

We are federally/state funded, as you know. [...] this has already been an evaluation criterion, yes, we have been obliged to, we should, urgently digitalize our things, [...] to simply provide them to the community. But this of course is the approach of a research museum. So [...] the pressure is relatively high and noticeable. (02)

Within our empirical sample, we found that museums follow very different provision guidelines and could not determine any overarching strategic goals relating to this group's utilization of digital content. Indeed, one of the interviewees made clear that they see the utilization of their content as a pragmatic issue, as they do not claim any proprietary rights over their objects:

These are not digital media, [...] [which our museum] has designed itself, created itself, but are things that others have created and which we keep here out of historical tradition. [...] That's why I said in the beginning that it is indeed important to be aware of what is at stake here, that is, this historic transmission within research infrastructure. (14)

Here, the collections are interpreted as material forms of knowledge that primarily serve as a basis for further research.

Utilization approach D: Achieving marketing goals

This approach exhibits a medium degree of open access and does not fully exclude considering the monetary gains from the utilization of digital content. Within this approach, museums' utilization policies are guided by commercial demands and the market value of their digital content. Accordingly, they charge their commercial user fees for the reuse of this content. In other cases, some user groups receive the digital content for free, as long as museums can expect a positive marketing effect and an increased visibility. Therefore, such museums generally cooperate with commercial platforms. The museums adopting this approach see themselves as cultural entrepreneurs or commercial enterprises. In consequence, they regard the utilization of their digital content as an opportunity to establish themselves as profit-making institutions. Hence, they try to copy companies from the economic sector. For museums operating according to this utilization approach, relevant stakeholders are those that urge them to become more profitable, such as market oriented political actors. Economically, independent museums or private enterprises may serve as models. If, however, museums are required to offer their digital content (such as digital reproductions) for free they demand additional government funding to stay profitable. Museums that subscribe to this approach often stand out due to their high numbers of visitors and popularity, and the demand for their content is high.

Four museums could be identified as following this utilization approach. Two of these mentioned specific amounts earned through the utilization of their digital content:

[We make] about 50,000 euros. That is not much, but it also is not something to entirely ignore. (04)

Contrary to other museums' statements, for these two museums such earnings form an integral part of the calculation of their overall budget. Besides the possibility for monetary gains out of digital content, two museums also engage in alternative business models. One museum, for example, expressed the desire to make customer support for digital content a paid service:

And one thing that we are thinking about now is to follow this approach originating in computer science, this idea of open source. There you also have programs which you don't pay for, but there are companies that do. [...] And usually they [make money] on the services around [the program]. (16)

In addition, museums in this group do not feel comfortable with users of digital content generating their own income without the museum getting a share:

When I think about it, other people making money with the things that we worked for [...] is not right. (11)

Museums of this group primarily want to market themselves via greater visibility and media presence. In contrast to museums that follow utilization approach A, public visibility for this group translates into a certain market value rather than an involvement in innovative participatory processes. This can also mean that museums are sometimes willing to provide their digital content for free if they can expect reputational pay offs. The commercial aspects of the provision of digital content are heavily emphasized.

Our empirical findings allow for the following further conclusions. First, it becomes clear that depending on their chosen utilization approach museums prioritize certain tasks of their complex mandate. One can assume that this emphasis on particular tasks is one way for museums to overcome conflict-laden expectations regarding the utilization of digital content. For example, regarding the conflict between providing open access, on the one hand, and the ability to provide interpretations of their objects, on the other hand, utilization approach A (public engagement) focuses on the open access provision of content and disregards all other tasks. Meanwhile, approach B (safeguarding heritage-related knowledge) focuses on the ability to control the interpretation of their collections, thus restricting open access. In contrast, museums following approaches C (promoting research infrastructure) and D (achieving marketing goals) look for alternative solutions. By focusing on further aims of cultural institutions, namely research and profitability, they avoid taking a side in the conflict between open access and the

documentation of their content. Approach C emphasizes research as a core task of museums, while approach D concentrates on the aim of being profitable.

Second, the different utilization approaches vary systematically in terms of their levels of open access. Utilization approach A (public engagement) represents a high level of openness as content is mainly provided for free and without any major limitations on its reuse. Utilization approach B (safeguarding heritage-related knowledge), on the other hand, stands for a medium level of open access. Within this approach, museums aim for greater visibility of their content, while only publishing it in combination with comprehensive contextual information and according to certain standards of documentation. In individual cases of politically or culturally sensitive content, the content cannot be reused by others at all. Utilization approach C (promoting research infrastructure) has a high degree of open access as a large part of the digital content of museums is seen as research data. Therefore, a lot of content is published with free licences in order to support further research. Finally, utilization approach D (achieving marketing goals) once more represents a middle level of open access to digital content. On the one hand, much content of the museums is made visible and provided for reuse, since the museums can use the revenue from licensing for marketing purposes. On the other hand, this implies limited open access, because the content is often not provided openly or for free.

Conclusion

In this study we presented an empirical analysis of how museums in Germany deal with the provision and utilization of their digital content. The analysis was conducted against the backdrop of changing public, governmental and funding agencies' expectations with regard to the free provision of digital museum content (open access). Semi-structured qualitative interviews with representatives of German museums provided the empirical data. We were able to identify four ideal type approaches regarding the museums' utilization of digital content. They were found to be embedded in the museums' different self-understandings as organizations and connected to different practices and strategies.

Our study aims to make a contribution to the understanding of how museums deal with conflict-laden expectations for open access. From our research it becomes clear that museums tend to focus on some organizational tasks and disregard others to solve conflicting demands and that, in doing so, they are substantially guided by their institutional identity and self-understanding. Through the concept of different utilization approaches, we were further able to show that museums adopt different levels of open access by offering their digital content under low, middle or high restrictions. Finally, the scheme of utilization approaches may be used as a planning tool. It can help museum officials recognise the advantages and drawbacks of providing open access to their digital content.

Further research could determine qualitative or quantitative indicators for the institutional approaches and empirically test their applicability. Also, international comparative studies could investigate whether the results of this study are only relevant to the German institutional context, or whether they are also valid in other countries. Further research could also analyze whether individual approaches are more pronounced in different departments of museums and how staff members negotiate them. It would be especially interesting to see whether all utilization approaches discovered here continue to be followed by museums or whether some of them become standard practice.

The digital transformation is in full swing. It can be assumed that the cultural shifts described in this study form only the beginning of changing expectations towards cultural institutions regarding open access. Thus museums, and possibly even their individual departments, will have to constantly reframe and change their positions and strategies. This process, as well as how museums' react to it, needs to be empirically examined in more detail. In an ever more globalized and digital world, museums will have to find their role in a worldwide, interconnected information and knowledge society.

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Notes

- 1 <https://openglam.org/principles>
- 2 Directive 2003/98/EC of the European Parliament and of the Council of 17 November 2003 on the re-use of public sector information
- 3 Budapest Open Access Initiative (2001)
- 4 Bethesda Statement on Open Access Publishing (2003)
- 5 Gemeinsame Erklärung der Wissenschaftsorganisationen zu Open Access und Urheberrecht (2009)
- 6 Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities (2003)
- 7 German research museums are part of the Leibniz Association and constitute non-university research institutions at the national level that follow certain guidelines and evaluation criteria. They consider their collections primarily as research data and focus on object-centred research (GWK 2012).
- 8 Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities (2003)
- 9 <https://www.wikipedia.org/>
- 10 <https://www.google.com/culturalinstitute/beta/>
- 11 <https://www.deutsche-digitale-bibliothek.de>
- 12 <https://www.europeana.eu/portal/en>
- 13 <https://www.bpk-bildagentur.de/>
- 14 <http://www.artothek.de/en/>
- 15 Due to requirements of anonymity, we can give no further details on the participating museums.
- 16 While one could have expected a correlation between specific views and the hierarchical position of the interviewees and/or their departments, such a link was not empirically confirmed within our sample.
- 17 Furthermore, short summaries (memos) of the interviews were used to keep track of individual responses (Mayring 2000).
- 18 Our understanding of these approaches is loosely derived from the notion of institutional logics in organisational theory (Friedland/Alford [1991], Thornton/Lounsbury/Ocasio [2012]). By approaches, we refer to institutional patterns of meaning that actors can draw on to make sense of themselves and their practices.

- ¹⁹ In contrast to our initial assumptions, museums did not differ in terms of their utilization approach with regard to their thematic focus, size or number of visitors, method of financing or funding period or the working field of the interviewee. Consequently, these variables were not used in the construction of the ideal types.
- ²⁰ In citizen science approaches, science projects are conducted with the help of or completely by interested amateurs (<http://www.buergerschaftenwissen.de/citizen-science/was-ist-citizen-science>).
- ²¹ The original quotes have been translated from German to English by the authors.
- ²² In the European Union and Switzerland, the duration of protection is 70 years after the death of the creator (Klimpel *et al.*, 2017).
- ²³ Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities (2003)

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