

MAIN

ARTICLES



Werner  
Schweibenz  
Germany  
Roberto  
Scopigno  
Italy



# D Documenting Past Exhibitions: Why and How Information Technology Could Help to Preserve Dismantled Shows

## Summary

The paper reflects why past exhibitions should be documented virtually. It states that exhibitions are manifestations reflective of a time and place, and therefore interpretative, which makes them interesting for future research. It describes how information technology can help to preserve museum displays.

## Introduction

Exhibiting is one of the major functions of museums (Lapaire 1983: 65) and traditionally museum communication takes place in exhibitions (Schweibenz 2015: 42). At the same time, exhibitions are also manifestations of the state of the art in research and appreciation of the presented topic and the related objects and issues. As Mary Anne Staniszewski (1998) showed in her examination of over two hundred photographs of past exhibitions at The Museum of Modern Art in New York, these shows were both aesthetic medium and cultural practice. At the same time, exhibitions take place “within the curatorial and architectural framework created by the museum display”, which is an artificial—if not to say a virtual—environment that constitutes the museum experience for the visitors (Müller 2002: 23). Therefore, it would make sense to document exhibitions virtually in order to preserve their display for future research after the physical installations have been dismantled and the objects gone back into storage or to their original institutions. In this way, researchers in the future could study past exhibitions, their interpretative approach and their relation to the architecture of the space. This would provide a more holistic and interactive record of past exhibitions than print catalogues or films from exhibitions can offer.

## Exhibitions are interpretative

As a cultural practice, exhibitions are part of a cultural setting and value system. Cassandra Tellier (1986) rightfully suggests that exhibitions always have a frame of reference set by the interpretation of the curator. Even though this frame might try to be objective, it is always interpretative. Stephen Weil (1990: 76) points out that interpretation and

exhibition are “functions [that] are so intertwined with one another as to be inseparable” and that “an exhibition is shaped from its very outset by the values, attitudes, and assumptions of those who choose and arrange the objects that it contains”. Therefore, Weil concludes, there is no such thing as a neutral installation. The interpretative frame of the exhibition is representative of its time and place, and provides a unique socio-political context around the exhibition.

Therefore, it would be worth the effort to preserve the interpretative frame set by the physical museum display for future research by creating a virtual representation of the exhibition. In this way an impression of the set-up of past exhibitions could be presented in the digital space. By seeing these interior views, one could learn about aspects such as:

- the physical architecture hosting the show;
- how the individual objects are located spatially and how they interact both with the architecture and with each other;
- how the path of the visit was planned and outlined;
- how means to provide orientation in the exhibition were applied;
- how explicative and educational information (e. g. museum texts, interactive systems or installations) were used;
- how the overall storytelling in a specific time and place was designed.

These are all factors that change over time and depend on the prerequisites of the individual museums. Therefore, it would be of interest from a museological perspective to study these aspects. Also, it would be especially interesting to learn how and why museums have changed (Carrier 2011: 187). Aspects of change might concern, for example, the architecture, the display, the interpretation, the scholarly agenda.



## Exhibitions relate to architecture

Exhibitions are installations that relate to the space surrounding them; they are part of the overall architecture of the museum building and interact with it based on their overall display. In galleries visitors experience the objects in a spatial order, although they usually cannot touch the objects (Müller 2002: 24). This spatial order of the artworks in the exhibition spaces is purposefully arranged by curators, the prescribed course of the visit through the rooms and along the objects usually follows specific intentions. Therefore, visitors experience the space of the gallery as a part of the exhibition. Subsequently space contributes to the understanding of the objects. As David Carrier (2011: 183) explains, a great deal of contemporary art would barely be possible without the display spaces of the museums, so that contemporary art cannot be understood without analysing the museums where it is displayed. Indeed, architecture is a key frame that adds to the specificity of any exhibition.

## Documenting past exhibitions—an unresolved issue

Although exhibitions have a prominent role in shaping scientific discourse and cultural practice, from a documentary point of view the situation of preserving them has to be considered as ambivalent. This is especially true when asking the question of what is left after an exhibition is closed and dismantled. Usually the only thing that gives testimony of an exhibition is the printed catalogue (Lapaire 1983: 96; Schweibenz 2008: 142). But the catalogue has a limited potential to record and retell the physical exhibition. From a scientific perspective, the catalogue documents the discourse and results of the exhibition, making them accessible for future research. However, an exhibition is a highly visual interpretation of a topic and a physical instrument of communication while a catalogue is most often not, or at least not to the same extent, particularly as far as installations and architecture are concerned. Indeed, the catalogue is usually focused on textual information, regularly only economically illustrated by photographs of individual objects but hardly showing any spatial setting and arrangement of the objects or the exhibition's overall display. Furthermore, unless there is an inventory overstock, a catalogue rarely gets re-printed or made available digitally after the exhibition is dismantled. So “in most cases, an installation disappears when the show ends” (Carrier 2011: 182). If exhibitions

are documented photographically at all, it is mostly done for internal purposes and the files are usually not accessible to the public. David Carrier (2011: 182) depicts a situation for art museums which also holds true for other types of museums: “there are no systematic histories of hanging arrangements in the major museums. If memory fails, it is easy to check some visual detail of a painting. But if you forget what an installation looked like, you may be out of luck.”

To prevent this, some museums have started to make photographs of past exhibitions accessible online. For example, The Museum of Modern Art in New York makes past exhibitions available online from its founding in 1929 to the present and continually updates these Web pages. The exhibition descriptions largely consist of master checklists of the works of art, press releases, lists of artists and installation views. Even though this information is quite basic, it can be a start for researchers interested in a past exhibition. In the future, technology could help to create an enhanced visual and spatial experience of past exhibitions’ settings by providing interactive interior views of the museum’s galleries online.

### Examples of museum displays online

An early example of the provision of interior views of exhibitions was the Google Art Project. On February 1, 2011, Google launched this project in partnership with 17 museums from Europe and the United States (Proctor 2011: 215). The idea was to shift from “content” to “context” by using innovative technology. Part of the innovation was to offer high resolution scans of artworks which allowed close inspections and intimate encounters with images at a visual depth not possible even inside the galleries. In this way, online visitors have the opportunity to engage with artworks in intimate close-ups. Another part was to provide interactive interior views of galleries comparable to the presentation of exterior settings by Google Street Views. In this manner, online visitors would be allowed an experience roughly close to moving through the galleries. Although it was not entirely new, the Google Art Project functionality was successful because of the integrated features in combination with an attractive user interface. It provided a professional experience although critics had some doubt if interior views of the galleries were an adequate means to present art (Proctor 2011: 219).



Another project is Bode 360°, a panoramic museum tour of the Bode-Museum, Berlin, and a best-practice example of Virtual Multimodal Museum (ViMM), a project funded under the EU Horizon 2020 programme. For the virtual panoramic tour of 63 rooms with 102 panoramas, online visitors can see either a list of rooms or a floor plan of the museum. On the tour, they can admire 850 artworks that are linked to the online database SMB-Digital of the Staatliche Museen zu Berlin (State Museums of Berlin) where online visitors can find detailed object information and further images (Gülcker et al. 2017). Bode 360° is an example of a feasible and good-quality solution for attractive panoramas and virtual tours.



Fig. 1. Bode 360°—A panoramic view into the virtual exhibition hall “Basilika” (State Museums of Berlin—Stiftung Preussischer Kulturbesitz, Wolfgang Gülcker)

## Using technology to clone museum exhibitions

A major goal would be to set up an arsenal of technologies and digitization methodologies able to digitally *clone* a physical exhibition. The progress in digitization technologies (3D acquisition or the modern and effective image-based representations such as 360-degree images or videos) allows us to produce highly sophisticated digital models of an architectural space. Using such technologies could provide us with samples of the visual space, either in 3D or 2D, to support an easy interactive navigation of the users of this digital

space. Several experiences concerned the 3D digitization of museums and the subsequent virtual navigation. Three-dimensional technology is ready, but still a bit complex to use, navigate and access on the usual channel of distribution—the Web (Callieri et al. 2011, Scopigno et al. 2017). Even if several new platforms allow to efficiently access and navigate 3D representation on the Web (Sketchfab 2018, Potenziani et al. 2015), the production of digital 3D clones of complex spaces is still too expensive for standard museums and cumbersome to navigate for a general audience.

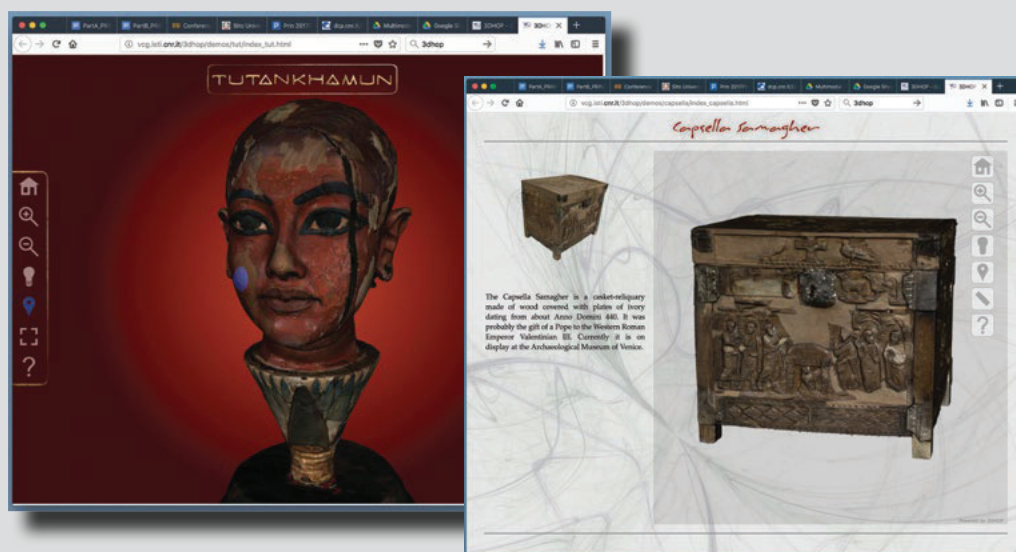


Fig. 2. Two examples of interactive visualization on the Web of digital 3D models, enabled by the open-source 3DHOP platform (developed by CNR-ISTI, <http://vcg.isti.cnr.it/3dhop/>)

Another important constraint in the design of a cloning methodology is cost and data complexity. Cloning an exhibition should not become a major cost of the overall budget which is always limited, sometimes even stretched to the limit. For this reason, the adoption of 2D media (e.g. panoramic images) could be more promising, as it has already been pioneered by Google for giving us access to our urban environments (Google Street View). A network of interconnected panoramic images is definitely sufficient to support interactive navigation with a very high degree of visual quality. This has been already demonstrated successfully by several museums and projects.



While digitally cloning an exhibition, we should not limit our focus to enabling the interactive navigation over the spaces. All *tangible* content provided in the exposition should be made accessible to the virtual visitors from the same platform, using natural and intuitive data access policies. This is again quite easy with all the written or pictorial content provided by means of tags, legends or panels. Links can be easily established from the digitized representation to the digital version of all those materials (that is, if I am interested in reading a text panel visible in a specific panoramic view, I should have a link to jump to a clean presentation of the material shown in the panel, i.e. moving from a possibly distorted or insufficiently focused image to a digital reproduction of the panel, maybe browsing a PDF file). For all the static content it is quite easy to create richer digital contexts where a lot of content is inter-linked and made accessible through the virtual representation. Artworks on display can also be offered to visitors by means of the interactive visualisation of 3D scanned models.

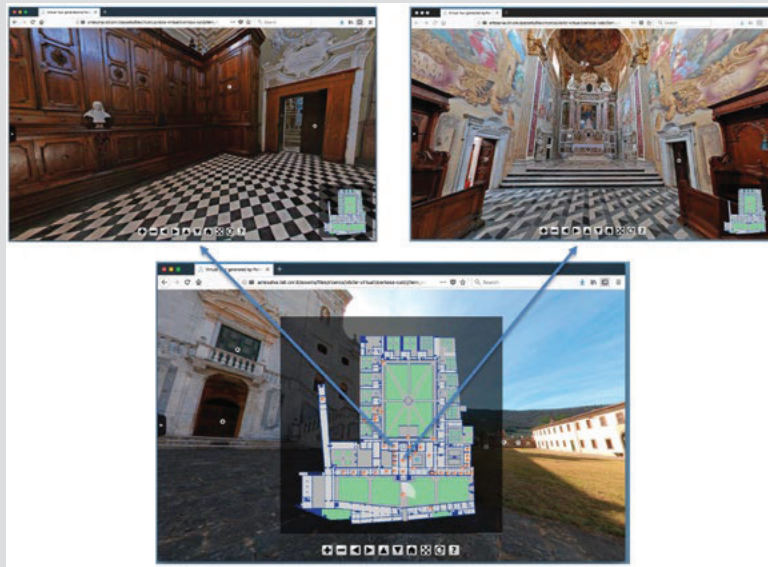


Fig. 3. The Charterhouse of Calci near Pisa, a panoramic tour to the monument (ISTI CNR Pisa)

The work becomes more complex when we have to reproduce *dynamic* content, such as the interactive installations which have been produced for the exposition. Here the work would be much easier if at the time the exhibition is designed, the curator took into



account the issue of preserving the content of the interactive installations. Installations can nowadays be built using Web presentation technologies and thus could easily migrate from a kiosk installed in the exhibition to a resource on the Web. Again, the work is more complex when sophisticated input and output devices are used in the installations (e.g. if a tangible user interface is used to drive the interface, transforming this experience in an experience accessible from the Web with a usual mouse/keyboard input is quite complicated or even impossible). Therefore, the digitization of the more dynamic parts has to be either well planned at the design stage, or recovered during the lifetime of the exposition, again using the video media by recording examples of uses of the installation. In the latter case we would not be able to give an interactive access to the installation content, but at least we would preserve a flavour of the experience provided to the visitors.

There is also a third level to be mentioned: an exhibition is not just its *tangible* static and dynamic content. Part of the show is also *intangible*—for example, the level of involvement of a group of kids while they are experiencing an educational installation or a serious game incorporated in the show as an experiential element, not a tangible one. This is also something that would be valuable to be preserved and offered to future visitors, giving the possibility to perceive (at least in part) the aura of the physical experience. Again, this part of the experience could also be (at least partially) replicated by recording short video clips and offering them as content linked to specific locations or content of the cloned exhibition.

The approach described does not require the development of more advanced acquisition technologies, but conversely could be implemented with current basic technological building blocks. A key solution is in fact the possibility of a) using multiple available media to sample reality and b) interlinking and navigating those media in a common presentation context.

Several works have already concerned the use of multiple media in a common navigation context; some examples are the joint use of images and 3D models (Snavely et al. 2006, Brivio et al. 2013) or integrating 3D models and text (Leoni et al. 2015). What we miss is a sophisticated authoring system able to create the integrated and interlinked assembly of all those digitized elementary components, possibly with a sufficiently intuitive GUI, which makes it usable by curators and exhibition staff.



## Related issues and open questions

There are many related issues and open questions to be discussed in this context. However, as space is limited, we have to restrict ourselves to a few examples.

**Legal issues:** The Google Art Project also includes interior views of the cooperating museums. Creating these interior scenes involved complex copyright issues as works protected by copyright had to be omitted or blurred out (Proctor 2011: 217). Similar problems arise also for *privacy issues*, for example related to the presence of people in the images acquired (e.g. faces usually have to be blurred).

**Bibliographic records for past exhibitions:** When digital representations of past exhibitions are created, they also have to be catalogued in order to make them accessible for a scholarly community. The easiest way would be to follow the example for online exhibitions (Hagedorn-Saupe & Peukert 2015; de Francesco, Hagedorn-Saupe, Natale & Schweibenz 2015).

**Standardisation as a key factor:** “Perhaps as much as innovation, museums need standard interfaces to help our visitors find and orient themselves more easily with new content in new environments”, as Nancy Proctor (2011: 220) rightfully states. Until standards can be established, the emergence of a de-facto standard will be highly beneficial for different reasons:

- to establish common preservation strategies for the digitized elements;
- for producing a standard pipeline and methodology to clone exhibitions;
- to consolidate a uniform graphical approach to the navigation and retrieval of the data.

Take the example of the already mentioned Google Street View: anyone is now able to navigate those visual representations. We have consolidated a common experience and know-how.

## Conclusion

From a museological perspective it is important to understand why and how museum displays have changed over time, especially because exhibitions are interpretative and relate to the architecture of the museum building. However, when an exhibition is closed and dismantled, there is hardly anything left other than the printed catalogue, which scarcely shows the spatial setting and arrangement of the objects or the exhibition's overall display. Therefore, exhibitions should be documented in the form of virtual interior views to preserve the visual and spatial experience of past exhibitions' settings for the future. Examples like the Google Art Project and Bode 360° are best practice examples for innovative solutions of how information and communication technology can be used to clone museum exhibitions and make them accessible on the Web. The paper discussed also some technical aspects and sheds light on some related issues and open questions.

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