Preservation of Important Cultural Heritage Manuscripts Using Digital Technologies

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Abstract

Since the late 1990s the potential of the digital world for generating new ways of engaging with heritage, has been a key focus of academic work and cultural practice. For the long-term preservation and curation of material heritage, digital technology has the potential to offer new insights into our understanding of the past. This paper shows a possible way for an enduring saving of extraordinary writings with the help of the project "The digital library of St. Paul".

Key words: Heritage, digital resources, cultural value, library.

Introduction

Cultural heritage is stored in the form of cultural and heritage resources such as mathematical forms of cultural and heritage resources such as manuscripts, artefacts, rare books and rare photographs. With the advent of digital technology, most of the latest literature is digital in nature, but there are still many analog forms. Communicating Culture and Heritage for Future Generations Libraries, archives and museums collaborate to ensure that cultural heritage resources are accessed in their collections in digital format via the Internet. Digitization allows archives and museums to convert their analog materials into digital formats.

Preserving cultural material is needed to ensure long-term access to analog and digital information for future generations. While digitization is needed, as well as the preservation of cultural and heritage resources, there are several challenges to digital protection and challenges of documents. Many digital and presentation projects for archivists, project managers, curators, librarians, and digital enthusiasts are underway around the world, however, it is difficult for project managers and professionals to cope with technological change and other challenges.

Scholars have been so eager to take advantage of digitized manuscripts, that Wido van Peursen, a biblical scholar, notes: "now that the digital object has become available, who will ever go back to the 'real' manuscript?" [1].

For evaluating the use of digitized manuscripts we need to describe their 'digital materiality'.

Nowadays the digital technologies develop very fast, file formats change permanently and the copying of cultural objects like literature, pictures, sound and films is nearly everyone's practice. Often several examples of one object may be found on one computer.

According to digital media not only the object has to survive, also a tool for playing this media is needed.

Stepping into the Digital World

It is generally understood that we are transitioning from a print world to a digital world. Digital print sources are printed works that are now considered full-text digitally encoded, which means you can search for content, select it, and manipulate it (restrictions).

There are four general benefits to use digital repositories. The use of digital and digital sources will be accelerated as there is no need to go to the library, collect, request all the necessary books and magazines and photocopy them or save extensive records. In addition, it provides access to resources that are otherwise difficult to obtain. The manuscript reader in particular benefits digitally in this regard, as each of them is unique and can only be accessed in one place on earth, usually in a library, by their strict rules. In addition to these two aspects of accessing the item level, the benefit is also perceived that it is possible to dig inside the source directly into the desired section. This is especially true for digital sources whose content is fully searchable. Finally, and more desirably than is actually said, digital repositories can open up new avenues of research through ways of publishing completely new research questions, methods, and results.

The Western Semitic Research Project took digital photos of the Dead Sea Scrolls, the resolution of which is so high as to check for hair follicle patterns and surface deterioration, and take infrared photos to reveal the text more clearly. Scientists have already arrived at the atomic level. [2].

Digitization at the atomic level should be seen as a reduction in the propensity for high quality and absurd, caused by the whole concept of a digital manuscript with more than life. Enthusiastic about the quality of digital manuscripts, Nolan writes that "digitization […] offers a new and improved version of the original medieval object." Spiech argues that if scientists have the impression that digital manuscripts give a better picture of a material manuscript, we will undoubtedly prefer it and more or less forget the original, material.

Digital manuscripts were concerned with two factors: the digital data that represents the real, digital manuscript, and the digital context in which it is stored or offered. The first is one or more files, when different properties are offered. for example, a folder full of files, or a PDF with a photo on each page, or a combination of them. The other can take many forms, but I will call it a repository in all cases. Ten concepts will help us analyze these two factors: (1) collection size; (2) online access; (3) downloadability; (4) Portal; (5) visitors; (6) reference to page numbers; (7) image resolution; (8) color balance; (9) lighting; And 10) how the image is dug.

The size of the digital repository (according to the number of material manuscripts) is an important way to assess the commitment of the library to understand digitization and the globally digitized trajectory. In large cases, libraries adopted a digital quilt strategy, simply digitizing the entire collection without selecting presumably significant manuscripts and presumably insignificant manuscripts.

Another aspect to consider is the portal, which is the website which the user first enters, in order to find from there the actual photos of a manuscript. It is usually related to the manuscript catalog which a library has [3].

Viewer is a technology that allows users to view and browse digital manuscripts. A closer reading will better download the manuscript and check it yourself. For quick browsing and tasting, online browsing is a welcome technology. Here, too, improvement can be expected. Currently, most visitors are somewhat generous, especially when browsing from page to page. Using technology makes sense as far as it helps us.

Page numbers (or folio numbers), together with the manuscript call number, are the basic descriptions that a user needs to make a reference to a manuscript.

The image resolution is the most important metric in determining the quality and usability of a digital surrogate. Technically we are looking for the DPI or PPI: dots/pixels per inch, which tells you how many pixels were spent on storing one square inch of material manuscript. The higher the better, obviously, although it can take proportions that are unmanageable for private use.

For any images we encounter, we do well to evaluate images with a combination of three indicators: dimensions, file size, and a visual impression. For example, the digital

surrogate for Landberg MSS 711 folio 150a, at Beinecke Library, is said to be available in "high resolution." Its downloadable JPG file is 2588 × 3415 pixels. Had it been stored in a format called "lossless JPG," a variant of the JPG format that preserves the quality of the image as much as possible, this image should weigh around 13.3MB, however, the size of the downloadable file is actually 2,3MB, more than eighty percent smaller than expected [4].

We can get a better grip on the usability of a digitized manuscript by evaluating it according to the ten categories introduced above and, in fact, we can use these to include a digital codicological description in our publications.

As Maura Nolan, a scholar of English-language literature, puts it, digital manuscripts can reveal details that would not otherwise be "visible to the naked eye." Indeed, digital imaging "often gives us more information than simply accessing a physical object." [5].

To illustrate this we discuss the possible way of permanent storage of special writings with the help of the project "St. Paul's Digital Library" [6].

The monastery, its library and a digital project

The monastery of Lavantal in St. Paul became the most important treasury in Carinthia In 1809. Its extensive library consists of thousands of books starting with early medieval manuscripts.

Fig.1. The Coberger bible 1478.

The general idea of the Digital Library project was to digitize the library's most important and beautiful writings and to provide accessible and inexpensive education to the general public. The only media that meets these requirements is digital - the Internet and CD-Rom or DVD. To ensure full access of the important writings, all pages without being cut, including the front and back sleeves, are documented in a given condition. With the latest restoration, you can find very new covers of very old manuscript books. Although the cover does not match the contents, the entire documentation is very important for the identification of the book.

There are several possibilities for the way of recording. On the one hand a complete digital recording with a high end scanner, resulting in 120MB file sizes, was suggested, on the other hand the traditional photography of reproduction was an opportunity.

Fig 2: The first printed book, missale romanum speciale abbreviatum.

Publishing process

The purpose of the publishing process is to distribute the produced images online - upon purchase of the supporting project - or with the help of CD-ROMs. In the case of the Internet, the image size should be reduced. An illustration of this can be found in the University of Cologne Library [http://www.ceec.uni-koeln.de], where a complete stock of ancient manuscripts has been published online and is available without restriction [7]. CD-Rom Edition requires useful programming and presentation. Therefore the appropriate file format must be found. The importance, distribution, and ideology of a

portable document file format - a brief PDF - ensures platform independence and points to a future standard that has been widely used over the years and is scientifically recognized. The ability to program a simple user interface, with Javascript-supported features, makes it suitable for educational purposes. Important information can be highlighted and not bothered by complicated buttons and menu structures. The zoom feature allows you to increase the size of the original up to 500%. This should be sufficient for the research needs and prevent the books from being moved and touched again [8].

The pictures are accompanied by scientific articles describing the general history and significance of the books. Similarly an interpretation of the illustrations can be added to complete the product.

As practice shows, archiving analog reproductions is more convincing. When published and accessible, digital media, as well as Internet databases and e-books, are invincible and used all over the world.

Conclusion

Several institutes and companies are trying Surviving a culture through digital distribution [Examples: www.octavo.com [9] or www.ceec.uni-koeln.de], Jobstmedia-digital publishing. Nevertheless, the archiving system in the background is analogous Or digital - needed to save reproductions. One of the best ways of storing digital data are server systems. Backup copy The data is updated regularly and is therefore updated with new ones Media provided.

The only way to avoid digital storage problems is to keep the original in the best environment[10]. Because the standards of technology and storage systems are changing and evolving rapidly, only stable analog technology or the ongoing copying process on a server-based system will ensure that data is saved over time.

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Thus it is necessary to combine analog and digital technologies to ensure on the one hand the durability of reproducible material and, on the other hand, make it available to digital objects worldwide.

References:

1. Peursen, W. van, 2010, "*Text Comparison and Digital Creativity: An Introduction*." pp. 1–30 in *Text Comparison and Digital Creativity*, edited by W. van Peursen, E.D. Thoutenhoofd, and A. van der Weel. Leiden: Brill, p. 10.

2. Treharne E , 2012, "Books Under the Microscope." *UT News: The University of Texas at Austin*; "Fleshing out the Text: The Transcendent Manuscript in the Digital Age." pp. 465–478 in *Postmedieval: A Journal of Medieval Cultural Studies* 4, no. 4 (2013), p. 471.

3. Cf. Chevallier, P., L. Rioust, and L. Bouvier-Ajam, 2013, "Consultation of Manuscripts Online: A Qualitative Study of Three Potential User Categories." *Digital Medievalist* ; Ornato, E. "La Numérisation Du Patrimoine Livresque Médiéval : Avancée Décisive Ou Miroir Aux Alouettes ?" pp. 85–115 in *Kodikologie Und Paläographie Im Digitalen Zeitalter 2*, edited by F. Fischer, Chr. Fritze, and G. Vogeler. Norderstedt: BoD, p. 96.

4. Murray, J.D., and W. VanRyper , 1996, *JPG file size is different from image to image, as even the lossless format performs file size compression techniques*, *Encyclopedia of Graphic File Formats*. 2nd ed. Bonn: O'Reilly & Associates, pp. 191–205.

5. Nolan, M. "Medieval Habit, 2013, " *Modern Sensation: Reading Manuscripts in the Digital Age*." pp. 465–476 in *The Chaucer Review* 47, pp. 470, 472.

6. The Austrian Pilot Project AOLA, Wien, Austria. http://www.ifs.tuwien.ac.at/~aola (accessed 29 Jun. 2003);

7. Codices Electronici Ecclesiae Coloniensis, Erzbischhöfliche Diözesan- und Dombibliothek Köln, Cologne, Germany. http://www.ceec.uni-koeln.de (accessed 29 Jun. 2003);

8. Alfred Schmid: Die Notwendigkeit der Archivierung elektronischer Publikationen, österreichische Nationalbibliothek, Wien, Austria. http://www.onb.ac.at (accessed 29 Jun. 2003);

9. Digital imaging process, Octavo, Palo Alto, USA.http://www.octavo.com (accessed 29 Jun. 2003);

10. Lang B.: The legal deposit of electronic publications, the British Library, London, England. http://www.unesco.org/webworld/memory (accessed 29 Jun.2003); Berger et al.: von Gutenberg zum World Wide Web, Dachs Verlag,Vienna, Austria. 2000.