

PROTECTING CULTURAL IMPORTANT WRITINGS WITH NEW METHODS IN REPRODUCTION AND ELECTRONIC PUBLISHING

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ABSTRACT:

The engraving remaining of a culture or society are those results, their people created in art or developed for technical progress. Especially documents with stories and interpretations of an era are most important and informative. A loss of this work and its content is irretrievable. Therefore it is useful to find new ways of documentation and recording techniques to maximise the persistency and the consciousness toward the cultural object in a wide public.

Digital techniques produce excellence results in reproduction, but the question of steadiness of the digital data is controversial. The archiving of analogue reproductions is more conclusive.

In case of publication and accessibility, digital media's, like internet databases and ebooks, are unsurpassable and are used worldwide.

The conclusion is that there is the necessity to combine analogue and digital technologies to guarantee the persistency of the reproduced material on one hand and to enable a worldwide accessibility to the digital objects on the other hand.

This paper shows and discusses a possible way for an enduring saving of extraordinary writings with the help of the project “the digital library of St.Paul”. The points of emphasis are the quality and persistency of the reproduced material, the processing of the film including the digitising and the use of different digital technologies for the publishing.

1.INTRODUCTION

The discovery of printing around the year 1434 by Johannes Gensfleisch Gutenberg started a new era in literary cultural heritage. From that date onward it was possible to publish books to a wide public. Literature that used this way of distribution still exists nowadays, in opposition to many individual examples of books – handwritings – that were lost during time.

From that point of view the simple distribution is an efficient way to save cultural heritage, without at this point taking into account the used medium.

In the time of Gutenberg it was an outstanding effort to produce several examples of one book in a relatively short time. 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. Just from looking at the distribution we can be sure that we will find these objects – in any form – in the future after thousands of years again.

But saving culture isn't that easy. The persistency of an object is depending on the medium it consists of or is put on. According to digital media not only the object has to survive, also a tool for playing this media is needed.

The following article describes the project “digital library St.Paul”, its way of recording, the used file format and the planned way of publishing.



Picture 1: the Coberger bible 1478



Picture 2: the first printed book, missale romanum speciale abbreviatum, 1438?



Picture 3: part of the first book for lawyers, Austria, 1528

2. THE MONASTERY, ITS LIBRARY AND A DIGITAL PROJECT

Since the settlement of the Benedictine order in 1809 the monastery St. Paul of the Lavanttal became the most important treasury in Carinthia. The first reference in a document can be found in 1091, when the monastery was build by Engelbert I.

Today not only the abbey and the monastery are worthwhile visiting but also the extensive library, consisting of thousands of books starting with handwritings of the early middle ages. Many of them are sent to exhibitions all over the world during the year. But most of the time the valuable examples are stored in a darkened room at the ground floor, where the humidity is relatively high, thus the parchment and paper with its drawings and gold plates stays flexible, which would lead to broken pages and destruction of the books otherwise.

Exploring this old part of the library still can lead to in surprising results, like in 2001 when two unknown pictures of Albrecht Dürer were found in a book.

The general idea of the project “digital library” was to digitise the most important and beautiful writings of the library and to make them accessible to a wide public in a cheap and educative way. This means that an expensive facsimile print has to be avoided and additional information about the object and its history should be added. The only media following these requests are digital ones – the internet and the CD-Rom or DVD.

To guarantee full access to important writings, every page without cropping and including the front- and back cover is documented at the present state.

Depending on the latest restoration, very new book covers can be found for very old handwritings. Although the cover does

not match the content, the documentation of the whole is very important for the identification of the book.

3. DIGITAL OR ANALOGUE

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.

The discussions and considerations resulted in the analogue photography which has to meet some requirements to the planned procedure.

The reasons for this decision were following reflections:

- The digital scanner needs some minutes for the registration of one single page. During this process the instrument is sensitive to vibrations. To avoid influences on the photo a steady underground – like concrete – should be used. According to the high security level these objects are concerned with, it was not possible to find a respective room like the requested in the monastery.

- When thinking of a library of hundreds of books, the digital files request a big amount of storage memory, which has to be saved. This means that the continual costs are expanding, without knowing the development of storage qualities and quantities in future.

In addition the project could not be restricted to a certain amount of books. Instead the chance to include other libraries could be given, resulting in an exhausting amount of data. Therefore the infrastructure to save these digital data including the staff to take care of the system was not affordable.



Picture 4: the first printed book, missale romanum speciale abbreviatum, 1438?



Picture 5: the first book for lawyers, Austria, 1528



Picture 6: part of the Coberger bible, 1478

- In contrast to digital recording, the resulting material of the analogue reproduction can be stored for a minimum of 100 years without a special treatment – assuming an acceptable atmosphere.

By using a large format camera consisting of a special lens for reproductions and the latest fine structured Kodak film, the quality is near to the high end scanner material.

Of course the treatment of film is more expensive at the beginning. Especially the step of digitising, which is done by a specialized company, uses some time. But in the end the result of the documentation is analogue for an archive and digital for the further steps of publication.

4. DEMANDS ON THE REPRODUCTION PROCEDURE

The decision for the analogue way lead to assumptions and calculations for an expectable quality. A film material with an “resolution power” of 100 lines/mm would have about 5000dpi resolution in a digital standard (100 lines * 25,4 = 2504 lines/inch, resolving power means that 2 lines can be separated, therefore 2504 * 2 = 5008 lpi).

The quality of the digitised film is not as brilliant as the digital reproduction, but the step of digitising is developing and may be repeated – if necessary – with better technologies in future.

In order to report the size and the colours, different scales and tables were used in a way that the photographed picture consisted of the object, a scale in the height of the writings surface, a scale in the height of the cover, an exact right angle parallel to the film plane and a colour match table of Kodak.

The usage of scales in different heights was necessary because the actual difference of these was up to 12 cm!

The camera position did not move from the first to the last picture, in order to produce a homogenous material for the ongoing production.

For the lighting studio flash tubes were used to treat the objects carefully with this very short but strong lighting influence, instead of using permanent lights.

5. PUBLISHING PROCESS

The publishing process started with the digitising. Using a film scanner for medium format films, the best quality delivered in uncompressed files could be 75MB.

The aim of the publishing process is to distribute the produced pictures via the internet – as soon as a supporting project can be acquired – or with the help of CD-ROMs.

In case of the internet the picture sizes have to be reduced. Guidelines for a useful preparation can be found at the library of the University of Cologne [<http://www.ceec.uni-koeln.de>], where the whole stock of ancient handwritings was published in the internet and is accessible without restrictions.

A CD-Rom publication requires a useful programming and presentation. Therefore an appropriate file format should be found.

The value, distribution and ideology of the portable document file format – short PDF – guarantees a platform independent and pointing to the future standard that is widely used for years and scientifically acknowledged.

The possibility to program a simple user interface via the supported Javascript features makes it suitable for educational purposes. The important information can be highlighted and is not disturbed by intricate buttons and menu structures.

The zoom function allows magnifications up to 500% of the original size. This should be enough for the needs of research and prevents the books from being moved and touched again.

The pictures are accompanied with scientific articles describing the general history and the importance of the books. In the same way interpretations of illustrations may be added to complete the product.

A minimum of two languages is one objective of the project’s idea.

6.RESUME

Jobstmedia is not the only digital printing house working in this area of cultural heritage. Several institutions and companies try to save culture with the help of digital distribution [examples: www.octavo.com or www.ceec.uni-koeln.de].

Nevertheless an archiving system in the background – analogue or digital – is needed to save the reproductions. One of the best ways to keep digital data alive are server systems. A backup of the data is carried out regularly and thus the update to new media is ensured.

Thinking of all digital media that are in circulation – CD-Rom, DVD, MO, tapes, etc – a device for reading them is inevitable. In addition to the short term durability of the media, the loss of devices seems to be the main problem in saving a digital cultural heritage.

The only way to avoid problems with the digital storage of reproductions is to keep the original in the best environment available.

Since the standards of technology and the storage systems are rapidly changing and developing, only the stable analogue technique or an ongoing copying process on a server based system ensure the surviving of the data during time.

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