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Archiving digital data

Whether it is the gradual degradation of valuable negatives on nitrocellulose, the fire damage in the Anna Amalia Library, or in the Gallery of Modern Art in Ulan Bator, or the destruction of the city archives in Cologne – a digital archive does not replace the original, but it preserves all the relevant information and a realistic image of the objects of our cultural heritage.

Archives of all sorts contain analogous collections of irreplaceable value that have been abandoned to gradual degradation or in the worst case, were destroyed by sudden events. A majority of the treasures are being preserved as safely as possible and are hardly accessible.

Through digitisation these collections can be made available to a target audience, when and as needed, without the risk that the originals will be destroyed.

Simultaneously, two security aspects are addressed. Working with a digital copy can, on the one hand, reduce the access to the original as well as the risk of damaging the original considerably. The digital copy is, on the other hand, also a reflection of the condition of the original at the time when the digitisation was made. Due to further assessments this can degrade even further and in extreme cases (for example when the original is destroyed) the digitised copy can be used for the manufacturing of a reproduction of the original.

Both the development and the security aspect are reason enough to expose collections to digitisation. In this context you must ask the critical question of the long-term archiving of data.

In contrast to analogous archiving, digital data must be considered as detached from the storage location. The secret of lasting security lies in the ability to make copies without losing anything.

In the modern RAID or SAN systems data is permanently mirrored and “revolutionised” and can no longer be assigned to a specific storage location. Parts of the storage medium can be exchanged without incurring any data loss in the case of a malfunction or technical alterations. Provision is made through the storage of the data in multiple systems and different locations that the digital originals are still available even after extreme events. an verschiedenen Orten wird dafür gesorgt, dass auch nach extremen Ereignissen stets ein digitales Original verfügbar ist.

The durability of individual storage locations therefore plays a role when data is stored for a long period on static storage media, for example with the archiving of CDs and DVDs that are faulty. The moral decay will pre-empt the physical decay with the brand manufacturers of today that ascribe to their high-end writable CDs a durability of more than 100 years and for DVDs at least 20 years. It is therefore necessary, with the development of storage media, to convert early enough before there is no longer a device to read the old media, for example CDs and DVDs. When considering the rapid development in the area of storage media, this process is becoming possible at an increasingly lower cost. In contrast to analogous storage, the digital copying takes place without any losses. For safety reasons, identical copies should be kept in at least two storage locations.

Just as important as the proper archiving of data is the capturing of the object as a digital original without any losses and to also provide it with additional information (metadata). In particular, attention should be paid to the following:

- the format of the image data
- scan resolution
- color management
- metadata
- indexing
- data carrier

With a more consistent application of the philosophy for long-term data storage and the specialist creation of digital originals, the collections can really be secured permanently. Naturally, the digital original cannot replace the physical original. It will always only be a reflection of the original.



Degradation of nitro film