DIGITAL IMAGING DATABASE SYSTEMS
NEED "DIGITAL ORIGINALS"

Helmut G. Hofmann
Kodak Professional
Lucas Cranach Str. 3/3
70771 Leinfelden
Tel. 0711 754 57 46
Info@ImageManagement.de
www.ImageManagement.de

Gary Kammerhuber
Kantonsarchäologie Brugg / Schweiz
Industriestraße 3
CH 5200 Brugg
Tel. 0041 - 56 46 24 811
Gary.Kammerhuber@ag.ch
www.ag.ch/vindonissa/

1. Why do we need to digitize our contents?

Public institutions like archives and museums have an increasing need to digitize parts of their objects, images, documents, contents. As the major reasons we can be identy the following issues:

- In many cases the documentation of our heritage is doomed to perish; film and paper are difficult and expensive to preserve; the depreciation accelerates dramatically when originals are used for scientific purposes.

- Innovative institutions are changing their communication strategy and open up themselves to become a true public service, a trend which has started in major US institutions, and which is being recognized now in Europe as well.

- A third reason is simply the protection of originals from being used up or even lost; they should be replaced by a "digital working copy", which can easily be used in all scientific work, and which is suited best for all communication efforts. The portability of these files over the web and per e-mail will save time and travel expense for scientific staff; the readiness of publishing this content will carry our heritage into the broad public.

- Concerns about rights and unauthorized access arise since all professional database solutions must offer differentiated methods to control access especially to highresolution data.

Database projects have been started in many archives, both industrial and public, and not all of this work is implemented without problems. Many times issues have not been identified, products are being oversold by systems vendors, and the special needs of longterm archiving were not considered.

2. The planning of a database system merges different disciplines.

The planning of such a digital content management system is an exercise which brings together several disciplines into one project. It is the combination of

- **Strategic intent of the institution** like becoming a service institution

- **Definition of those disciplines and target audiences** who should use the material

- **IT organizational technologies** to be installed and maintained

- Redefinition of finding and searching mechanisms, and **rights for the content**

- **Specifying the contents** in a way that it can be used for many purposes

- Care for the **Color Management** of the imaging content which must show the "digital origianls" as they are in the books, paintings, or graphs on display

- Definon of **organizational rules** which have to apply to the new digital workflows

- Changing the **communication behaviour** of the institution

to mention just a few.

Some institutions are being mislead in picking the appropriate technology for storing and distributing their content, since the typical vendor wants to implement his best solution which does not necessarily fit to the needs of the user. In some cases it may be even a combination of analog and digital technology, and that is rarely programmed in the predefined software.

It may take the help of outside consultants to collect and tailor all necessary knowhow, and specify the needs for the application. Compromises are still the rule, standard recipes do not exist.

3. Project management of a dedicated person with a systematic approach is mandatory.

In the case of the Kantonsarchäologie in Brugg / Switzerland, this process was directed by a project leader who had the energy to learn what standards exist in software, hardware, imaging, and colormanagement. The management of the institution set the necessary time aside for a dedicated approach, a wise decision from the start.

The necessary steps of planning and implementing a digital archive were taken in a very systematic way, and it is rare to watch such a process to be successful without too many loops.

The systematic process in phases like

- Imaging audit
- Analysis of needs
- Definition of objectives
- Conceptual phase, definition of systems specs and
- Partnering and implementation

is a must, since we are dealing with issues which cannot be bought from the shelf. Every database project is unique and must be tailormade to the user`s special needs.

4. The critical issues deal with the transition from analog to ditial technologies.

The project management at the Kantonsarchäologie which exhibits their objects in the Vindonissa Museum went through those steps and had to make several critical decisions such as:

- Decision of the appropriate **storage technology** (microfilm, duplication, digital).

- Definition of **search criteria**, reorganize and prepare the analog archive.

- Decision for the **fileformats, image size and colorspaces** which are closest to the "digital original".

- Specification of **software and hardware needs** for the total system, based on the existing systems infrastructure and within budget limits.

- Selection of **partners for imaging and systems software.**

- Decision for **to make or buy** the scanning process.

Of course at the start of the project in 1996 not all of these steps and investments could be foreseen since the experience was missing.

5. Database systems need to be filled with the "digital original".

The notion of the "digital original" was one of the most difficult ones to clarify. The imaging vendors and the software industry so far do not define standards for longtime archiving, they concentrate on the mass markets of publishing, printing, and recently for the internet. So, the existing standards had to be screened according to specifications which were defined internally and through the interchange with vendors and other institutions. These standards cannot be looked up in relevant dictionnaries.

So it was mandatory to define the images in a way that they would

- contain **all necessary detail** which is being stored already on film
- be defined in **a colorspace which is device independent**, an issue which is relatively new for the publishing industry, which once was percieved as leading in the "science" of color management
- be captured in **a filefomat which will be accepted as a standard for a long time** by all software vendors (incidentally, this comes close to the definition of longevitiy of a digitial imagefile)
- be easliy be integrated into all possible workflows with different computer systems, in other words have the characteristics of being **platform independend**.

What was essential for the success of the project, that is the supportive role of the administration of the Kantonsarchäologie, and the conviction that this technology would be key in further activities to use the documentation for scientific purposes, and for enhanced communication to the outside.

6. Project management and consulting are essential ingredients for success.

In cases where there is no systematic projectmanagement from the start, things will fail due to the inability to handle a complex situation, where many people are involved with many differing opinions, sometimes biased by certain vendors.

The conceptual work was accompanied by Image Management Solutions, a consulting initiative of Kodak with experience in the auditing and redefinition of workflows. Fundamentals of colormanagement were transferred as well.

It was like pathfinding at times, since one thing is true in installing database systems: there is no standard solution, and at the start of any database project stands the meticulous auditing of existing workflows and the profound definition of the strategic objectives.

Most of the work has been done, and the results obviously stand up to the most strategic requirement such as: Database systems should have an extremely long livecycle, and only be built under the implementation of standards.

August 1999

A brochure of the project in German with the title **"Spurensicherung"** can be ordered from **info@Image Management.de**