The Challenge
Over one million collection objects are held by the fourteen different museums of the Staatliche Kunstsammlungen Dresden (SKD, fig. 1). From the world famous Grünes Gewölbe (Green Vault), Gemäldegalerie Alte Meister (Old Masters Picture Gallery) and Galerie Neue Meister (New Masters Gallery), through graphic and applied arts collections, ethnographical, and scientific collections to archives, almost everything expected in a museum is represented. Accordingly the requirements for a central administration system for the group’s various image and media data are equally complex and sophisticated.

The initial impetus for developing a Digital Asset Management system (DAM) was the exponential increase in data storage capacity required, mainly caused by duplicates of various image and media files. For this reason, one of the most important challenges for the project is slowing down the increase in data storage required as well as largely eliminating duplicates among existing digital assets. The intention is to achieve this through a strict single sourcing. The project has begun in December 2011.

A further goal is the configuration of a complex user access management system suited to the requirements of the various individual institutions as well as those of the group at the same time.

SKD uses the robotron*Daphne collection database to manage their collection. Thumbnails of collection objects are linked to the relevant records in the database. In order to access the high resolution images out of the collection database and at the same time make use of the DAM output functions necessary to enable single sourcing, the DAM system must be integrated with robotron*Daphne. On the other hand, a variety of object metadata of the collection database has to be available in the DAM system, used by Public Relations also for other digital assets not related to the collections (e.g. exhibition photos, lectures, reports, videos etc.). In this context it is crucial to indicate author and copyrights to the image and media files clearly.

"Due to the image and media management with Cumulus our digital assets are much better structured and traceable. Useful and efficient workflows emerge with the bidirectional linkage to the collection database Daphne. Particularly satisfying is the distinct reduction of storage space necessary to manage the increasingly growing data volume of our digital assets."

Michael John, Chief Technical Officer, SKD
Solution

The key to meeting these kinds of complex requirements is a detailed planning including input from those who will use the system. Due to the large number of users, a well-thought-out structure is needed. This applies both to the layout as well as to user rights.

Content development and day-to-day maintenance are carried out by editors in the individual museums. Group and museum admins take care of technical requirements. This general structure of labour enables a variety of different end users to get the most from the DAM system. Editors and admins hold regular monthly meetings to address any queries that arise and make competent decisions about further developments. Having started with three museums, others have been added gradually.

Before starting this kind of project, research must be done into which tools would be suitable and able to meet the challenges. Traditional collection databases are object-orientated and their add-on modules for the management of image and media data are limited in their suitability for asset-orientated data management following the principles of single sourcing. Particularly for these specific requirements Digital Asset Management (DAM) systems are available on the market, constantly challenged and upgraded to ensure long-term use by as many users as possible worldwide.

The DAM chosen must fulfil the following criteria:

- Standard DAM functions
- Ongoing adaptation to new operating systems, new hardware and changing demands
- Scalability for future needs
- Integration capability
- Reliability
- Long-term suitability
- Effective tools for access control

Implementation

After detailed consideration, SKD chose the DAM system Cumulus of the German firm Canto GmbH and the support of CDS Gromke e.K. from Leipzig. Already before this project started, CDS Gromke e.K. possessed extensive experience of Cumulus in museums, especially in the integration of Cumulus with collection databases.

Each museum and the public relations team has its own Cumulus catalogue at its disposal at all times. All image and media data (digital assets) are ingested by the relevant editors. This can be done one by one or in batches, with Cumulus automatically adding records for each asset, generating thumbnails for the light table view, extracting embedded metadata (IPTC – author rights, image title and description; EXIF – camera data etc.) and recording further metadata such as copyright information from predefined templates if required. These assets, catalogued with the least routine effort, function as the sole data sources for all further applications.

The resulting datasets can only be used by the museum in question at first. For group-wide searches by any internal SKD user, editors select and tag specific records to be automatically available to all those with the appropriate permissions. A further selection of media files, to be accessible to the public in the internet, is also tagged accordingly. Cumulus ensures they are always available and up-to-date via an external server. Additional manual updating of the website is superfluous.

In order to ensure assets are available to all users as needed, a hierarchical schedule of access permissions was introduced with the following user groups:

1. Users with single museum access: for searches only and with limited download rights
   Subgroup: additional permissions for higher resolution downloads
2. General users: read-only access to all internal records within SKD
3. Editors with read-write privileges for single museum maintenance: no privileges for deletion or category structure (hierarchy, thesaurus)
   Subgroup: additional permissions for category structure
4. Single museum admins: additional admin permissions for deletion and category management
5. Super admins

fig. 2 – Screenshot image archive
© Staatliche Kunstsammlungen Dresden
Cumulus login takes place via SSO (Single Sign On) using a link to the domain server. Users authenticated on the network need not log in to Cumulus separately.

The major advantage of using Cumulus as the single data source for digital assets is that any necessary amendments are made in only one location before automatically being allocated across all linked systems instantly, without the need for making further changes elsewhere. To achieve this, the full functionality of the DAM system must be utilised and integrated with other systems.

- Individual assets serve a variety of purposes: Cumulus instantly produces working copies on demand for a range of uses, e.g. for web, for print in various sizes, watermarked copies etc. These can be deleted immediately after use since they can be easily reproduced at any time. With this in mind, users no longer tend to keep separate backups on additional storage media, thereby creating unnecessary duplicates.

- Website connection: by linking Cumulus with SKD’s CMS, image data is automatically kept updated on the group’s website (see fig. 2). In addition, high resolution digital versions are provided for web searches. Before fulfilment of an order, the customer must indicate both usage (from a range of options) and circulation to receive a price for digital rights. Delivery and invoicing take place in the conventional manner for security reasons.

- Integration with the collection database: Daphne is an object oriented database, holding and interlinking metadata of collection objects. Cumulus manages all high res images and media data files relating to objects, as well as event photography and other digital assets not directly related to the collection. Each of these has its own asset-specific metadata (e.g. author rights, copyright, image title and description etc.). Integration facilitates direct access from Daphne to the assets in Cumulus and its search and output functions.

In order to facilitate the databases working independently from each other, the most important details of collection-related assets must be accessible within both systems.

To this end, Cumulus provides Daphne with optimised thumbnails once an appropriate selection has been made. At the same time, a range of metadata is automatically synced to Cumulus from the corresponding records in Daphne.

A very interesting feature of the Cumulus database in SKD is the automated coloured tagging of assets indicating publication ability (see fig. 3). This simplifies the work of experts as well as public relations professionals. Using a combination of technical data of images and pre-existing as well as agreed rights, colour tagging is facilitated by a custom algorithm, enabling users to immediately see within Cumulus’s digital lightbox which files may be used for which purpose.

Outcome and Benefits
At the time of production of this case study, the first museums are already experiencing a drop in the number of duplicates. Data cleansing of digital asset stocks and their copies will take some time, and will need to be carried out on a regular and sustained basis. In the long run, however, the investment will pay for itself many times over.

The speedy location and use of assets from Cumulus and Daphne is already resulting in significant time-savings. With little effort, digital asset requests can be fulfilled considerably faster than before. Scholarly searches for high resolution image files are conducted faster and simultaneously present new possibilities such as image comparisons etc. Group-wide collaboration has become far easier and has therefore intensified. Alongside collection-specific assets, all other digital assets now have their own clear place in the DAM system, simplifying the work of museum public relations professionals in particular.

Please contact us for further details.
About Staatliche Kunstsammlungen Dresden

The Staatliche Kunstsammlungen Dresden (Dresden State Art Collections) are among the foremost museums of the world. A total of 14 museums offer a thematic diversity that is exceptional for its kind. The museum originated in the collections of the Saxon electors, several of whom were also kings of Poland.

Historical sources show that August I, Elector of Saxony, founded the electoral Kunstkammer (literally “art chamber”) in the Residenzschloss Dresden (Dresden Royal Palace) in 1560. August the Strong and his son, August III, King of Poland, were important patrons and remarkable connoisseurs. They developed their art collections in a systematic fashion; in the process, they not only provided a foundation of extraordinary masterpieces for the Staatliche Kunstsammlungen Dresden, but also made these works accessible to select circles in their own time.

To the present day, the organisers of the collections consider it their duty to preserve tradition while developing their visions and helping to shape the future.

Not only the museums of the Staatliche Kunstsammlungen Dresden are world famous: The Dresden Royal Palace, the Zwinger and the Semper Building are among the most important sights in Dresden.

About CDS Gromke e.K.

CDS Gromke e.K. was established in 1993 with the business idea of providing services for digital imaging in the professional field. Today the company offers highly efficient digitising service in high end quality for the refurbishing and saving of archival stocks. Based on many years of experience individual workflows are developed including effective capture of metadata.

Planning, installation, application programming and software maintenance for Digital Asset Management Systems, setup of color proof workflows and fine art printing complete the projects. Integrating the Digital Asset Management Systems as central image and media file source with other databases (e.g. CMS systems, collection databases, merchandising planning and contra systems) relieves our customers of painstaking routine work.

CDS Gromke e.K. is Certified System Integrator and Platinum Sales Partner of Canto Inc.

About Canto

Canto is driven by the idea of delivering digital content more intelligently. This has made the company one of the global leaders in the digital asset management community. By always putting the focus on its users, Canto delivers scalable software and services that match client’s needs.

Canto’s Cumulus product line fits directly into clients’ platforms, giving them greater ability to manage and deliver content across the full range of systems and devices – protecting their brands’ assets, and ensuring efficiency. More than one million users from a wide spectrum of market segments have trusted Canto’s expertise since the company’s founding in 1990. Based in San Francisco (USA), Berlin and Linden (Germany), Canto is privately held and serves a worldwide customer base in close cooperation with its worldwide partner network. For more information visit Canto.com.

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