

Love Fades, Data are Forever

Dot Dalziel draws on her professional experience of museum collection data management to offer practical advice for museums considering or reconsidering their options in the digital age

INTRODUCTION

This article attempts to tease out core issues in the selection and use of software in collections management. It may assist you to answer the following questions: What is a collections management system? What types of software are available? How do I evaluate software? What's the best way forward once we have it installed?

WHAT IS A COLLECTIONS MANAGEMENT SYSTEM?

A Collections Management System (CMS) is a little like the healthy eating pyramid, with three main components: software, data and people. As with any database system, the major component by far - in terms of time, person resource, cost and lasting value - will be the data. This should be reflected in costings and implementation schedules for any collections digitisation project.

Selecting and implementing software can feel like alien territory, especially the first time. You should not have to reinvent the wheel though: make use of your networks with other institutions, and do your homework. Common sense will also take you a long way, as so lucidly expressed in this recent posting on the CANTALK forum:

“Whichever you choose to do, there are some questions you need to ask yourself, and these are fairly common questions for anyone thinking of any kind of database. You have to think beyond simple information storage and ask yourself what you want to get out of it. You need to ask what way you want to access your information and how you want to receive that information (reports, screen, lists, pictures etc). You need to think about how you want to interact with it. Some might just want a list sorted by names, locations, titles etc, others might want to sort things into categories, and others still might want to do research linking things together. Some might even want to put their collections on the internet or search within every record for a reference to a specific word. All of these things are not necessarily available in all systems.

Only when you have an idea of what you want, can you then measure what’s available against your criteria. If nothing meets them, then you either adjust those needs or design/have designed a specific system. Having said that, most of the commercially available ones have already thought through a lot of these processes.

The only other consideration is what is standard in your area. If one particular brand of software is used in your state/group/region then your chances of employing someone with existing knowledge of your system are increased.”

30 March 2006, John Watson, Leonora Gwalia
Historical Museum Ltd; posting on CAN-talk forum:
<http://lists.collectionsaustralia.net/mailman/listinfo/can-talk>

SOFTWARE

Here are general notes about types of software, with comments on efficacy in a Museum/Gallery environment.

Spreadsheets

These are great for speedy data entry. Functionality such as calculations, column formatting and drop-down lists can all assist in increasing the rate of data entry. You can sort data, and create a variety of output. Spreadsheets

are very useful for sending data to others (e.g. Valuations consultants, building managers, curators etc.).

However, they are not fully-fledged collections management systems as they do not offer a structured format for data, there’s no procedural control, and spreadsheet software is not capable of automating and maintaining a searchable record of changes to the data over time.

Also, spreadsheets tend to be difficult to use on the scale required to manage large numbers of items typically housed in museum collections.

Bespoke/Custom made database solutions

Databases such as Access, Filemaker Pro, and InMagic allow very computer-literate folk to create a Collection Management System that fits closely the requirements of the institution. However, there are some important considerations to take into account before building your own system:

Will there always be someone around who knows the customised parts of the system, how to maintain the system, and who can support users?

Will there be someone to enhance the system as the information needs of the organisation change?

Does using the software require training / special skill? Is there a good supply of people in the museums sector who have these skills?

Off-the-shelf Collection Management Software

There are many software products available that are pre-built and packaged specifically for the purpose of managing collections. These range in scope from extremely comprehensive to barely adequate.

Some systems have been created for or by a group of museums (for example, MODES, PastPerfect, Vernon Access and Mosaic). Unfortunately, some have struggled to maintain excellence because they lack a maintenance plan – there is no one (and no money) to carry forward the software, enhancing it as the needs of the users change. This is not surprising when the developer is a museum itself – after all, it is not the core business of a museum to develop, supply or support CMS software!

Many off-the-shelf CMS packages have similar functionality. You could use existing evaluation tools such as the CHIN (Canadian Heritage Information Network) Software Accreditation (see *Resources section on p. 44 for details*) to determine key differences between the products.

Ask the vendor what its long-term plans are for the product it wants to sell you. You could request that the company guarantees support for the product for the next five years, and that they do so in writing.

Escrow arrangements can help safeguard the software source code should the developer stop producing/supporting/maintaining the software. At the very least you should have a guarantee that you could access the source code and organise (probably along with other users) to have someone maintain the system, or just be able to get the data out of your system if the vendor goes belly up and you are forced to move to another system.

Freeware

There are many worthy projects providing free software (commonly available for download on the internet) for a huge variety of purposes, including rudimentary cataloguing of some collection types.

The best thing about freeware is the lack of cost, and care should be taken to ascertain the purpose and scope of the software, who designs it (does the user group have control over the software?), and how dedicated they are to the project. Could there be future costs to users if interest in the project wanes? At the very least you need to be able to extract data if you need to move to another system.

Examples of freeware are:

- Greenstone software – University of Waikato
- Specimen - cataloging natural history collections

Desktop Software vs. Web-based Applications

The emergence of web-based applications in the last few years is finally reaching into the deepest, darkest corners of the figurative museum basement. A local, topical example is the NZ Museums project: Te Papa's National Services Te Paerangi has teamed up with a local technology company Vernon Systems to bring online collections management tools to New Zealand museums.

The NZ Museums website redevelopment project will provide a portal for up-to-the-minute information about museums and the collections they manage. Participating organisations will upload data from an existing CMS or use the underlying CMS web application – eHive – and select records for inclusion in the NZ Museums searchable online catalogue. Storing your precious collections management data online involves a paradigm shift from the use of traditional desktop applications, and brings up new challenges within familiar issues such as security, digital preservation and contractual agreements with software providers.

Some key differences between desktop and web-based systems are:

The business model: Application Service provision over the web tends to be by subscription only, whereas desktop software usually involves the client site purchasing licences outright and subscription options for ongoing maintenance and support.

Installation: with web-based products this tends to be instantaneous – the user creates an account on the website and starts cataloguing.

Level of complexity: good web-based design will be relatively strong on accessibility and may be weaker in functionality than the average desktop system – partly because in the online environment new users expect to be able to teach themselves how to use the system, and partly because of the different technologies involved

Network administration: instead of relying on an IT company to look after your server and ensure that backups are being run on your precious collection data, your data is stored on the world-wide web and mirrored on a giant server-farm somewhere. You have to make sure that your internet service provider is up to scratch (and we are only now being offered real options as internet service consumers in New Zealand).

No matter what software you select, there are core questions that you should ask:

What is the scope of the product? Can it be used efficiently to catalogue all the various types of collections you have now – plus those that you may collect in the future?

How easy is it to search effectively within the system, across all collection types?

What reporting components does it offer? Are these inbuilt, or do you need to buy extra software to get information out of the system in other formats (Documents, agreements, spreadsheets, shelf sheets, labels for display (or storage ID labels), Management reports, etc.?)

There are some things a CMS won't do for you:

- A CMS will not enter your data for you (though it may provide import facilities and bulk updates across records)
- A CMS will not fix resourcing problems
- A CMS cannot create good information from bad data.

Data and Information

You can think of data as the building blocks, or core contents, of the CMS. Information is data that are organised/arranged in meaningful ways.

No matter how flash the software you use to manage collections information, it is of very little practical value unless you have good data – and methods for arranging or extracting the data so that they become information.

I cannot emphasise enough the need to organise data to provide for multiple information outputs. If you find yourself re-typing collections information for labels, committee reports (or for any other reason), stop, drop and roll! The core reason for storing collections data in a database is to extract information in the format you need, when you need it.

Descriptive text is a useful way of storing narrative information, but it is less than desirable for classification purposes. Hierarchical authorities that allow you to search over broad and narrow categories of items can be extremely useful, effecting, for example, searchability in a web public access catalogue.

Validation available in some CMS software assists the cataloguer in recording physical attributes (e.g. dimensions, inscriptions, media/materials etc.), dates (date of manufacture, provenance date, condition date etc.) in standard ways. This is important for searchability and output – you can only search by dates and sort records in date order if the data are consistent.

Terminology control (a.k.a. thesaural control, authority control) is an important tool in creating quality data. Many of us who are cataloguing records will not be experts on

all (or any part) of the collection. I might know a fair bit about archaeology, but I know very little about model aircraft! It is important for me that I have clear guidance on how to describe the whole range of collection objects, including standard ways for expressing relationships between objects and places, people, events, etc. A CMS may be able to assist, but your organisation will also have to develop, borrow, copy *and* implement clear cataloguing guidelines.

Standards

You are heir to all the work on standards within the museums sector internationally in the last few decades. Standards for data, procedures, cataloguing, and data interchange that survive in every day use tend to be those that have broad application across collections and organisations. Other standards are tied to particular technologies that may be heading for obsolescence.

National Services Te Paerangi may be able to advise on which collection data standards apply to your collections (*see also Resources list at the end of this article*).

Backups

No technology is entirely fail-safe, but with proper risk-management you can mitigate the consequences of system failure. Many factors influence decisions about who should perform regular backing up of your data, and what methods to use. I think one key question to ask is “how much work are we willing to lose?”. Simple safeguards include having a copy of the data kept off-site.

Another simple - often neglected – aspect of back-ups is testing the equipment and the back-up copy of the data. A back-up regimen where the same tape is endlessly recycled (i.e. today's backup replacing yesterday's on the one tape) is no better than no back-up at all – and lulls us into a false sense of security! What happens if the one tape fails, but no one notices until the backup is required?

PEOPLE ARE THE SYSTEM

The following multiple-choice quiz is a light-hearted attempt to raise issues of accountability and good management, and to expose some commonly observed human behaviours that blight digitisation projects. There may be multiple correct answers, but at least one answer will lead any project astray.

QUIZ

Any resemblance to digitisation projects past, present or future is purely coincidental.

1. We have information about collection items. This needs to be stored in some reliable, long-lasting medium, such as:

- a) The Collection Manager's brain
- b) The Accession Register
- c) Card catalogue(s)
- d) An electronic Collection Management System

2. The information needs to be retrievable by:

- a) The organisation
- b) Individuals within the organisation
- c) Stakeholders/community
- d) Badgering the Collection Manager at home

3. We have limited funding to digitise the collection, and limited resource for researching and implementing a collection management system. We hold a planning session in which:

- a) We set our goals and steps we might take to reach them
- b) We argue about what colours our website should incorporate
- c) We give clear direction to the staff/volunteers about their role in the process
- d) We decide that it is beyond our expertise and resources to make informed decisions about CMS purchase at this point, and resolve to gather more expertise/resource

4. We decide to go ahead and research CMS products in plenty of time for inclusion in next year's budget. An early step in this process is to:

- a) Ask the Manager's son/daughter/husband/cousin/friend to create a CMS for us (to be paid for under the table)
- b) Contact National Services Te Paerangi for any information they may have regarding CMS products
- c) Write a Requirements Specification listing the functions we require
- d) Talk to other museums about the software they have used or looked into

5. Our Requirements Specification has been sent to CMS vendors for comment. We get widely varying responses, and there is \$20,000 difference between the highest quote and the lowest quote tendered. We then:

- a) Follow up on the Reference sites given by the various vendors, asking for the client's honest opinions of the software and service supplied by the vendor
- b) Evaluate the tendered solutions against clear criteria, and ask the 3 shortlisted vendors to provide a programme of work for implementing their CMS solution
- c) Purchase the lowest priced system and redirect the rest of the budgeted amount to the museum storage upgrade fund

6. Cataloguers and other users have been trained in the functions of the system, and the cataloguers are ready to enter data. We direct the cataloguers to:

- a) Start entering data as quickly as possible
- b) Enter data in an efficient, consistent way – we give them a data dictionary of the fields to fill in, with clear examples, and decide how to audit (check) their data entry
- c) Wait until the curator comes back from overseas – after all, the curator knows more about the collection than anybody!

7. We have around 30,000 to 40,000 objects in the collection (we think), and have asked other museums for estimates as to the rate at which they enter data. We are pleasantly surprised when we hear that one cataloguer can enter 200 objects a day (that's a thousand a week!!). We have funding for a cataloguer for eighteen months (that's 38 extra weeks!!!), so we decide that we will:

- a) Create a basic record (with a consistent set of fields) for every object in the collection and then, as time allows, revisit these records and add more detail
- b) Decide to spend more time on the inventory, matching existing paper records to the electronic data and resolving mysteries
- c) Get the cataloguer to re-paint the Exhibit Hall, make scones for the Board of Trustees meeting once a month, and encapsulate the rare book collection

ANSWERS TO QUIZ

- 1 **b, c or d, not a**
Collection Manager's brains are no more (or less) reliable than the average homo sapiens brain, but as storage devices they are decidedly more prone to failure than a good CMS.
- 2 **a, b maybe c, not d**
Leave the poor collection manager alone!
- 3 **a, c or d, not b**
Focus!
- 4 **b, c or d, not a**
See notes above on bespoke systems

- 5 **a and b, not c**
Follow through with your processes – and make sure you are spending money in an accountable manner.
- 6 **b only, not a or c**
A robust cataloguing process should not rely too heavily on any one person, and should be properly documented so everyone can contribute to the success. Build in auditing so that you check back on your work. Find a balance between speed and quality.
- 7 **a and b, not c**
Do not divert energy, attention and funding from the project: the resulting data will be the poorer for it AND you could get in serious trouble from your funders.

DIGITAL IMAGING

Many museums are now incorporating digital photographs of their objects, taonga and specimens in their collection records. These make it easier to recognise collection items on the storage shelves or in the drawers. It is particularly useful for items like historic photographs, and other two-dimensional material such as posters and documents, especially if they are fragile, as it avoids the need to handle the original so often. In many cases existing photographs can be scanned and added to the collection record.

Your CMS should support your use of digital images in collection management for a variety of purposes, including identification and publication.

You need to consider file formats, metadata, storage, size, resolution, compression, metadata, copyright and digital preservation.

Ask for good advice from organisations that are successfully documenting their collection. Here are a few jewels gleaned from experience:

- Look for existing resources: quality transparency + transparency scanner (commonly known as “tranny scanner”) = digital image
- Avoid double handling of objects
- Plan the imaging project so that there is adequate, accessible space with appropriate lighting conditions to give a reasonable result.
- Double your output: one image is often adequate for two (or more) uses
- Organise your image files (and make sure they’re backed up regularly)

DIGITAL PRESERVATION

Just as you would take all reasonable steps to protect your accession register and card catalogues, you need to be active in managing risks to the data, images and application software that are part of a CMS.

Digital preservation is a fascinating and vital field of research, one which most of us do not have the wherewithal to pursue. Fortunately there are several organisations, which specialise in digital preservation and can provide guidance to collection managers (see *the list in the Resources section, p. 44*).

DATA PERSISTENCE

As well as being the major portion of a CMS, data are also the most persistent component. People come and go, and the organisation will almost certainly have to replace the CMS software at some stage, but the data should continue throughout the life cycle of individual collection items and beyond. This has three major implications:

1. Any CMS you select must give you data export options, and digital preservation principles apply.
2. It is worth investing the resources to do a good job of data capture in the first place, always bearing in mind that collections documentation will never be complete.
3. Robust back-up procedures are critically important, always.

Happy digitisation, and when love lies bleeding, take comfort in the longevity of your data!

Dot Dalziel has been implementing collections management software for the last 10 years. She is currently reinventing her working life to realign herself with principles of sustainable living (she will need to plant some 500 trees just to offset her air travel over the last decade), and developing her interests in ethno-botany.

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RESOURCE LIST

The following is a selection of resources I have found useful in digitisation and cataloguing projects:

ORGANISATIONS

CHIN – Canadian Heritage Information Network
www.chin.gc.ca/English/index.html

This membership organisation runs an evaluation round of commercially available CMS software every 2½ - 3 years. CHIN accreditation is a useful benchmark for CMS software selection.

Cornell University Library - Digital Preservation Management On-line Tutorial
www.library.cornell.edu/iris/tutorial/dpm/index.html

This Tutorial gives an excellent account of digital preservation strategies available. Fun aspects include the Chamber of Horrors – examples of preservation gone wrong.

DigiCULT
www.digicult.info/pages/index.php

European Union project March 2002 – August 2004 to monitor and assess technologies in use in cultural heritage management. The website offers access to Technology Watch Reports, Thematic Issues and Special Issues.

HATII – Humanities Advanced Technology and Information Institute, University of Glasgow
www.hatii.arts.gla.ac.uk/

This organisation claims to provide a “cutting edge research programme in humanities computing, digitisation, digital curation and preservation, and archives and records management.”

MDA – Museums Documentation Association (UK)
www.mda.org.uk

This UK membership organisation maintains useful links to a range of collections management resources.

National Digital Forum NZ
<http://ndf.natlib.govt.nz>

This is a coalition of organisations networking on digitisation projects in NZ amongst museums, libraries, archives and other cultural & heritage organisations.

National Library NZ Te Puna Matauranga o Aotearoa
www.natlib.govt.nz/en/whatsnew/4digitalstrategy.html#_Toc58755307

The Library’s digital Strategy includes “Activities to support the Library’s Digital Strategy”.

The organisation also runs digital preservation workshops and has convened the National Digital Forum.

National Services Te Paerangi
www.tepapa.govt.nz/TePapa/English/NationalServices

This organisation provides resources to NZ museums, in the form of the NZ Museums Standards Scheme, and many other useful

publications. They won’t tell you what collections management system to purchase, but they can assist you to decide for yourself.

PADI - Preserving Access to Digital Information, National Library of Australia
www.nla.gov.au/padi/

This site is a subject gateway to international digital preservation resources.

TASI (Technical Advisory Service for Images)
www.tasi.ac.uk/

This UK site offers answers for most questions about digital imaging, and advice on managing digital imaging projects.

DIGITISATION STANDARDS

Darwin Core

This is a simple set of data element definitions designed to support the sharing and integration of primary biodiversity data. See darwincore.calacademy.org/ for the latest on Darwin Core definitions.

Dublin Core

The Dublin Core Metadata Element Set is a set of 15 descriptive semantic definitions. It represents a core set of elements for describing cultural material.

MDA Spectrum

MDA (Museums Documentation Association, UK) has developed comprehensive data and procedural standards over the last 20 years, and museums can download a copy for free. The organisation introduced Spectrum compliance testing for CMS software in 2007. See www.mda.org.uk/spectrum.htm

The National Information Standards Organisation (US) has published *A Framework of Guidance for Building Good Digital Collections* – available from the NISO website at: www.niso.org/framework/Framework2.html

GLOSSARIES

Don’t be put off by the jargon used in describing technology used in collections management and digitisation. There are plenty of glossaries available on line – and here are two of my favourites:

Universal Preservation Format Glossary
info.wgbh.org/upf/glossary.html

CHIN Software Review Glossary of Terms: http://www.chin.gc.ca/English/Collections_Management/Software_Review/glossary.html