

Digital asset management in university libraries and information services



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Introduction

This paper explores the concept of Digital Asset Management (DAM) in university libraries and information services. It considers the rise to prominence of digital documents or “assets” owing to the growth of technology, and the financial, legal and intellectual problems universities will face if these are not adequately managed. It draws on current thinking and practice to highlight key issues, including Digital Rights Management (DRM), funding, and making the case for DAM to senior staff. The paper argues that DAM is increasingly vital to universities and that libraries are key players in this arena, concluding with steps that could be taken to develop a DAM strategy in consultation with key stakeholders.

What are digital assets?

Digital asset management has been an accepted practice in business for some time. In this context a digital asset is generally graphics or multimedia: for example artwork, a presentation or a music file (Atkinson and Blackburn, 2006; McClure, 2009)^{1,2}. A digital asset often has a “cultural or monetary value” (Holst, 2001)³. Businesses understand the value of intangible resources (McKinney, 2005)⁴ and many, especially media organisations, have developed good systems for managing digital assets (Joint, 2009)⁵.

The term 'asset' is used to show that files have intrinsic value that makes it important to manage them (Haus and Ludovico, 2006)⁶.

Digital assets in universities can comprise a variety of media including text: examples of digital information include "text files, still images, audio and video files, research datasets and real-time experimental data" (McCord, 2002)⁷. Pennock (2008)⁸ adds e-journals, web resources, e-prints, e-learning objects and materials, and scientific data to this list. E-journals, which are typically licensed content, are perhaps inappropriate for inclusion as 'assets' of an institution, although they are obviously valuable resources available for the institution and its members to explore alongside the assets that it has created. McCord (2002)⁷ defines a digital asset simply as "digital content plus associated metadata".

What is digital asset management?

'Digital asset management' is sometimes used interchangeably with digital library or institutional repository, but it can also be interpreted as an extension of that idea encompassing a wider range of resources (McCord, 2002)⁷. The term sometimes refers to the software used to manage digital files (Joint, 2009)⁵. In an academic context, Joint (2009) regards DAM as a metaphor for integrated digital services on campus. Haus and Ludovico (2006)⁶ explain the concept as follows:

"...the locution 'digital asset management' (or simply DAM) refers to the practice and domain of organizing digital files. DAM is a field related to content management, and often is considered as a superset of this subject".

Background

In the last few years the digital world has expanded considerably. There has been a shift in the way in which records are stored. Within the UK tertiary education and research community, research papers, administration records and other intellectual assets are often stored in digital rather than paper form (JISC, 2006)⁹.

It has been recognised that digital methods of data storage leave files more vulnerable to data corruption, software becoming obsolete and hardware wearing out, rendering important information inaccessible (Carpenter, 2005)¹⁰. In addition, as technology changes and develops ever more quickly, information is likely to be lost even sooner (Chowdhury and Chowdhury, 2007)¹¹, meaning that digital information is far less permanent than its paper counterpart (JISC, 2006)⁹. The problems that will arise if universities lose their ability to access digital resources are considerable. Glasgow University considers that if access to such records are lost the “University loses the ability to consult them, can place itself at legal risk, deny academics the ability to reuse their work and waste vast sums of money by losing the ability to access digital materials created at the University” (eSPIDA, 2007)¹².

The development of institutional repositories of electronic research documents, using software packages such as DSpace and Eprints, could be seen as a step towards full digital asset management. Institutional repositories generally focus on research documents (particularly journal articles), whereas DAM programmes also include university-specific administration documents. By managing institutional repositories, libraries and librarians are reinventing themselves, having previously managed information resources generated outside universities (Walters, 2007)¹³. Managing the entire digital assets of an institution could be seen as a natural extension of this task. Joint (2009)⁵ argues that a lack of business cases being made for DAM, as opposed to institutional repositories (for which there is a quantifiable benefit, as they assist with a university’s research assessment), is hindering the development of DAM and the concept of librarians managing the entire content of a university’s digital assets.

Current thinking and practice

A number of issues surrounding DAM are at the forefront of current thinking.

Digital Rights Management (DRM), “the digital management of rights pertaining to the access and use of digital materials”, is a current problem as it is easy to copy and duplicate digital resources (Agnew, 2008)¹⁴. In addition, the rules on copyright are less

clear for digital resources than they are for traditional physical resources. Some practitioners including Robson et al (2003)¹⁵ are arguing for a new outlook on digital copyright and a subsequent adaptation of the technology to reflect the dynamic and changeable characteristics of digital content.

Authenticity is also a problem, as it is sometimes difficult to tell if a document is the original one, or if it has been manipulated, whether on purpose or by accident (Lazinger, 2004)¹⁶. This issue has implications for the evidential and research purposes of documents.

DAM systems are a critical issue. A specialist system is needed for DAM to work effectively. A DAM system is “an integrated suite of infrastructure components used to capture, catalog, store and manage digital assets, and to expose those assets to creative tools for producing video, audio, Web and print content” (McCord, 2002)⁷

There is some debate over whether an open source or bought system is preferable. In addition, most content management systems are designed for businesses, which often specialise in rich media. Such systems have, however, been successfully used in academic organisations (Joint, 2009)⁵.

Funding is another contentious issue, with discussion over who should be responsible for funding the implementation of DAM. Most early projects were funded by external agencies (Lazinger, 2004)¹⁶, calling into question whether organisations themselves will be willing to fund their own DAM programmes. Rogers (2003)¹⁷ has suggested that funding will be easier to obtain if it can be shown that there will be long-term results.

Selection and preservation of digital materials is more complex than for printed materials. Pennock (2008)⁸ identifies three different methods of preservation:

Refreshing – copying digital files to a different storage medium to prevent them becoming obsolete – this does not get rid of the backwards compatibility problem;

Migration – transferring files to a different technology – the current favoured method;

Emulation – the method proposed for the future – enabling advanced computers to mimic older software and hardware. This method is seen as the most useful, as changes in technology are unpredictable.

The Digital Asset Assessment Tool (DAAT) has been created to help assess which materials need to be preserved. It is markedly different from traditional systems assessing the preservation of physical resources. A Digital Preservation Training Programme (DPTP) has been introduced offering residential courses in this topic (Pennock, 2008)⁸.

Standards are another important area. Two standardisation systems applicable to DAM exist: the Open Archival Information System (OAIS) Reference Model and the Metadata and Encoding Transmission Standard (METS) (Carpenter, 2005)¹⁰. Currently there is little advantage to be gained from using METS, as few institutions use it. However, it is flexible and easy to adapt for possible future needs (though the flexibility could be a disadvantage in the context of repository networks). The UK Data Archive and the National Archive are two examples of repositories currently compliant with both systems. A programme of METS awareness training has attempted to raise awareness of standards across the UK (Pennock, 2008)⁸.

Strategic planning is essential. There is general consensus that convincing senior management of the importance of DAM is a crucial step. McKinney (2005)⁴ suggests that a successful strategy must be undertaken both ‘top down’ and ‘bottom up’ and change the culture of the organisation. Currall and McKinney (2006)¹⁸ argue that, as sufficient technology now exists, putting the case for DAM forward to management is the most important issue. Digital Libraries Initiatives units (DLIs) have been used in some cases (e.g. the Universities of Cornell and Tennessee) to develop DAM programmes. Carpenter (2005)⁴ reports that challenges related to DAM are “as much related to organisational process, policy and culture issues as to technical issues”.

Authors are in general agreement that librarians should be responsible for DAM systems, as an extension of institutional repositories:

“Academic libraries should be key players in this movement because they are in the best position to articulate how such new initiatives relate to traditional information services” (Rogers, 2003)¹⁷.

DAM in practice – case studies

Several UK universities and colleges have implemented DAM systems, often through projects supported by JISC’s Supporting Digital Preservation and Asset Management in Institutions programme.

The University of Glasgow - eSPIDA

eSPIDA stands for ‘effective Strategic model for the Preservation and disposal of Institutional Digital Assets’ and aimed to “develop and implement a sustainable business-focused model for digital preservation, as part of a knowledge management agenda in Higher Education institutions”. It brought together librarians, archivists, information technology specialists, those with business, strategic and financial responsibility, and external advisors to examine the costs and benefits of digital preservation and management. Digital assets considered include research materials, institutional records and some teaching materials (Carpenter, 2005)⁴. The programme was also designed to have wider impact by assisting businesses to promote the idea of DAM despite the lack of definite financial benefit and achieve sustainable digital preservation (Currall and McKinney, 2006; Pennock, 2008)^{18,8}.

University College London and the British Library - LIFE

The LIFE (Life cycle Information For E-literature) project takes a life-cycle approach to costing digital preservation and asset management. The LIFE model builds on work done at the BL in the 1980s to calculate the total lifetime costs of keeping an item in the collection and identifies six stages in the life of digital library resources: Acquisition, Ingest, Metadata, Access, Storage and Preservation. It has been shown to be both useful and applicable; similar life-cycle models have been developed by other JISC projects for electronic corporate records and e-prints (Pennock, 2008)⁸

John Wheatley College – MANDATE

MANDATE examined “digital asset management needs in John Wheatley College relating to documents supporting a pro-active approach to Freedom of Information legislation principle and flexible access to learning and teaching materials” (MANDATE, 2007)¹⁹. The programme consulted management and other college staff to develop a management toolkit. The strategy ensured that all materials created in digital form were stored centrally and preserved in a way that maintained their continued accessibility, while complying with retention requirements (MANDATE, 2007)¹⁹. The programme recognised the importance of cultural and organisational, as well as technical, requirements (Pennock, 2008)⁸.

King’s College London – Managing Risk

Managing Risk was designed as a model business preservation strategy for corporate business assets and combined the preservation of academic resources alongside corporate information. After a survey was carried out which found that DAM practices varied widely, a strategy was developed in order to maximise the life-cycle of, and minimise risk to, records (Pennock, 2008)⁸.

Conclusions – moving forward

Digital assets in universities, incorporating research output, e-journals, learning materials and institution-specific data, are increasingly vital to the institutions concerned. The growth in digital documents and the speed at which technology changes means that it is vital to implement effective digital asset management, otherwise organisations may lose vital research output, face possible legal challenges and potentially lose money. A number of issues, including DRM, funding, preservation methods, standards and implementing an appropriate system need to be taken into account when executing DAM. A strategy should be formed in consultation with librarians, IT professionals, senior management and those who would be working with the system on a day-to-day basis.

The following steps are suggested for moving forward:

- Form a focus group, or 'Digital Libraries Initiatives Unit', to help shape the DAM programme.
- Put forward a case to institutional management and/or an appropriate funding body to establish funding, making sure to emphasise the value to the institution.
- Think about whether an open-source system or a bought one would be best suited to the institution.
- Look at OAIS and METS to ensure the sustainability of any strategy implemented and to ensure that any procedure meets accepted standards.
- Complete an audit of the kinds of materials held by the institution in order to assess which need to be preserved.

Laura Steel was a student on the MA Librarianship programme at the University of Sheffield in 2009-10. This article is based on an assignment undertaken for the Academic and Research Libraries module co-ordinated by Professor Sheila Corrall.

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³ Holst, S. Digital asset management, XML, rich media, DRM and a traditional business value: profit, in: XML Europe 2001, 21.-25.5.2001, Berlin, Germany, 2001. Available from: <http://www.gca.org/papers/xmleurope2001/papers/html/s25-1.html>, [Accessed 21 November 2010]

⁴ McKinney, P. Espida and sustainable digital preservation, Glasgow: University of Glasgow, 2005, Available from:

https://dspace.gla.ac.uk/bitstream/1905/443/1/ARC+magazine_espida.pdf [Accessed 21 November 2010].

⁵ Joint, N. 'Practical digital asset management and the university library'. *Library Review*, 2009, **58** (2), pp 89-96

⁶ Haus, G. & Ludovico, L. A. 'The digital opera house: an architecture for multimedia databases'. *Journal of Cultural Heritage*, 2006, **7** (2), pp 92-97

⁷ McCord, A. Overview of digital asset management systems. Washington, DC: EDUCAUSE Evolving Technologies Committee, 2002, Available from: <http://www.educause.edu/ir/library/pdf/DEC0203.pdf> [Accessed 21 November 2010].

⁸ Pennock, M. JISC programme synthesis study: supporting digital preservation and asset management in institutions. London: HEFCE, 2008. Available from: http://www.jisc.ac.uk/media/documents/programmes/preservation/404publicreport_2008.pdf [Accessed 21 November 2010].

⁹ JISC Digital Preservation and Asset Management. London: HEFCE, 2006, Available from: <http://www.jisc.ac.uk/whatwedo/programmes/preservation/assetmanagement.aspx> [Accessed 21 November 2010].

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¹¹ Chowdhury, G. G. and Chowdhury, S. Introduction to digital libraries. London: Facet, 2007.

¹² eSPIDA FAQ and common comments about espida's work. Glasgow: University of Glasgow, 2007. Available from: <http://www.gla.ac.uk/espida/faq.shtml> [Accessed 21 November 2010].

¹³ Walters, T. O. 'Reinventing the library – how repositories are causing librarians to rethink their professional roles'. *Portal: libraries and the academy*, 2007, **7** (2), pp 213-225

¹⁴ Agnew, G. Digital rights management: a librarian's guide to technology and practise. Oxford: Chandos, 2008.

¹⁵ Robson, R. et al. 'Share and share alike: the e-knowledge transformation comes to campus'. *EDUCAUSE Review*, 2003, September/October. Available from: <http://www.educause.edu/ir/library/pdf/erm0351.pdf> [Accessed 21 November 2010].

¹⁶ Lazinger, S. 'Issues of policy and practice in digital preservation', in: Andrews, J. & Law, D, eds *Digital libraries: policy, planning and practice*, Burlington, VT: Ashgate, 2004, pp 99-112

¹⁷ Rogers, S. A. 'Developing an institutional knowledge bank at Ohio State University: from concept to action plan.' *Portal: libraries and the academy*, 2003, **3** (1), pp 125-136.

¹⁸ Currall, J. and McKinney, P. 'Investing in value: a perspective on digital preservation'. *D-Lib Magazine*, 2006, **12** (4) Available from:

<http://www.dlib.org/dlib/april06/mckinney/04mckinney.html> [Accessed 21 November 2010].

¹⁹ MANDATE Final report: Managing Digital Assets in Tertiary Education (MANDATE), London: HEFCE, 2007, Available from:

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