Archives and Web 2.0: the example of the September 11 digital archive

Dr Bob Pymm

Bob Pymm is a senior lecturer and course coordinator of the Master of Information Studies program at Charles Sturt University. Prior to this he worked for the Australian War Memorial and the National Film and Sound Archive in Canberra, latterly as the Manager of their Collection Development area. His teaching and research interests are in the areas of preservation of digital materials, issues around audiovisual materials and popular culture and archives.

The recent establishment and growth of archives or repositories holding purely digital materials has seen an emergence of topic specific archives being created with minimal resources. Many such archives are eschewing traditional archival practices such as appraisal and description. Instead, they are relying upon the users to both donate material and provide the associated descriptive metadata. The result is a growing number of archives managed outside of traditional archival practice using a Web 2.0 approach focusing on user participation. The 9/11 Archive in Washington is one such archive and is used as the case study for this paper. Having been established in 2001, the archive has experienced many of the problems, and successes, this approach implies. This paper considers these and the implications they raise for the future of archiving more broadly.

Introduction

The traditional concept of what constitutes an archive is changing with the rapid move to digital objects as the primary form in which records are produced. While this may depend somewhat on the aims and objectives of the organisation creating the records, the sophistication of

their systems and for some records, legislative requirements, it is clear that the move to digital is inescapable and that paper-based records as the primary form for recording and preserving the activities of an organisation or event are declining. Caroline Williams[1] quotes a National Archives of Australia comment that 'corporate information has moved from paper ... to email; reports ... are more likely to be accessed via websites ... and an agency's intranet replaces the correspondence file'. The Council of Australian Archives and Records Authorities (CAARA) emphasised that the overwhelming majority of records created in the twenty-first century are digital,[2] and at a recent Institute of Information Management event, Margaret Chalker, Assistant Director-General, Government Information Management at the National Archives, noted how the digital realm was 'putting an end to our reliance on paper'.[3]

Further supporting this claim is a statement by Konica, a company offering commercial document management systems and digital archiving solutions, which suggests that 90% of documents in an average office environment are created as digital files and that managing these is far easier, and cheaper, than managing their physical counterparts.[4] Yet despite such figures and the introduction of sophisticated electronic document management systems, there is still a long way to go in reducing the reliance upon paper and the introduction of truly paperless workflows and the paperless office.[5]

This has led to a situation where for most established archives, there now exists a need to grapple with a hybrid environment (see for instance the National Archives of Australia *DIRKS* manual which, in discussing the design of recordkeeping systems, provides information on the establishment of electronic and hybrid systems).[6] Reflecting this view that the move to digital is inescapable, considerable efforts have been put into the development of safe and secure digital archiving strategies to be implemented in parallel with existing policies and practices for managing traditional media. Physical materials – files, papers, photographs and the like – are still being acquired and accessioned in large numbers, while at the same time a wide range of digital objects are being acquired and ingested into various systems. Given the need to run dual systems for well into the foreseeable future, the pressure on limited resources is considerable. Not only do all the traditional costs

associated with physical media need to be included in any budget, but also, a growing proportion of financial resources will need to be directed towards software development, hardware acquisition and ongoing maintenance and migration strategies to cope with the increasing level of digital input.

The hybrid archive also creates a more complex preservation environment, requiring a mix of skills and facilities – and again, the sharing of limited resources – in order to deal with the range of media and their unique storage and preservation requirements. Neil Beagrie[7] in his survey of digital preservation initiatives in major institutions in Australia, France, the Netherlands and the United Kingdom has noted that 'Institutions have received little or no additional core funding to address digital preservation'. Three years later, the Collections Council of Australia were still calling for new government funding in this area.[8] Last year, a submission to government from the Australian Library and Information Association (ALIA) repeated the concern 'that Australia lacks an adequately funded national research and cultural digital preservation program'.[9] Thus the issue of managing both traditional preservation activity and the rapidly expanding demands of the digital environment are imposing increasingly heavy burdens on resource-strapped archives.

However, for the users of archives, the potential accessibility of digital materials makes them a particularly attractive resource. The ability to access online, anywhere, anytime, is highly desirable and has led to an enormous increase in visibility, feeding into a cycle of increasing demand for access. Again, this increased demand has to be managed within existing resources and is complicated by the existence, in most archives, of large traditional collections that users also wish to access. Thus the growth of digitisation-on-demand or similar programs in order to facilitate that access will continue putting pressure on limited resources.[10]

Given the complexity of managing and resourcing hybrid archives, and the benefits to users in improved access to digital collections, there is therefore an attraction, if establishing an archive in the twenty-first century, to determine on a digital-only approach. Not only can resources be exclusively targeted to establish and maintain appropriate software

and hardware infrastructure and systems to ensure preservation and access, but the physical infrastructure needs associated with the traditional archive are reduced or eliminated altogether. There arises the possibility that archives of considerable breadth and depth can be developed on a relatively modest budget and maintained over the long term, again at low cost.

Digital archives and the potential of Web 2.0

Today, most universities in Australia and elsewhere in developed countries have established institutional repositories[11] - digital archives containing work produced by academics and students, which are becoming increasingly important resources for assessing research outputs and providing access to such research. These repositories depend completely on input provided by academics who also provide a large part of the associated metadata.

In addition, some newly established archives, usually with a specific subject focus, have decided to accept only digital objects into the collection and, if traditional materials are offered, to digitise these items in order to be able to take them into the archive. Examples in Australia include the RA Fisher Digital Archive hosted by the University of Adelaide covering the work and publications of this well-known statistician,[12] and PARADISEC (the Pacific and Regional Archive for Digital Sources in Endangered Cultures), a cooperative venture between four Australian universities focusing on endangered languages and comprising mainly digital audio material.[13]

Both these archives, and many similar ones here and overseas, while being non-traditional in one way by comprising only digital content, are also quite traditional from another viewpoint in that they are created and 'curated' by professionals. These professionals will appraise material for inclusion, determine accessibility, and create relevant metadata, access tools and finding aids. Concerns over the ongoing viability of this approach have been voiced widely in the archival community - large backlogs of material awaiting processing are common. Greene and Meissner reported from a survey in the US conducted across 100 repositories in 2003–2004, that 34% had over half of their material unprocessed,[14] and thus effectively

unavailable. In Australia, at the 2008 Australian Society of Archivists Conference in Perth, Marie-Louise Ayres and Emma Jolley reported on their project to improve management of the National Library of Australia's manuscript collection and its growing backlog.[15] A different understanding is emerging as a result of such reports that acknowledges that the past approach to description in particular has not been able to keep up with the growth in collections and that alternatives need to be considered. One alternative which has gained considerable attention recently, and is particularly relevant to digital archives, is the involvement of users in the description process. This approach can indeed be broadened out into a model whereby users become involved in all aspects of the archive, including depositing material, creating the associated metadata, and adding their own commentary and interpretations to existing holdings, effectively bringing what has been termed a Web 2.0 approach firmly into the archival world.

A fundamental premise of the Web 2.0 philosophy is the participation of users in some or all aspects of the work at hand. In many ways it is as much a social phenomenon as a technological one. McManus has succinctly described the philosophy of Web 2.0: it 'is to let go of control, share ideas and code, build on what others have built, free your data.'[16]

Engagement with users thus becomes a two-way process, where they are encouraged to participate as equals and contribute to, as well as make use of, collections. An outstanding recent example is the Newspaper Digitisation Project being managed by the National Library of Australia.[17] Australian newspapers have been scanned using optical character recognition software, creating digitised texts at the rate of thousands of pages a year, and being made available to anyone to correct transcription errors via the Internet. The library does not have the resources to undertake this work themselves and opening it up to users has led to huge benefits in improved data with no apparent downside. Rose Holley reviews the rationale behind this approach and suggests the wider potential for user participation in the project through creation of subject trails, annotating material and repackaging.[18]

Clark Shirky describes the use of the Web 2.0 approach as 'applications that set out to harness large scale contributions and participatory zeal on behalf of users' and goes on to discuss what he considers to be the three key factors influencing the success of any such projects. Firstly, it is about offering users creativity – the opportunity to work with the data in ways that are quite unpredictable – do not try to limit options but be as open as possible: 'here's our dataset – surprise us'. Secondly, establish a social contract with users, get them interested and it will be self-fulfilling – do not try and put in place any formal mechanisms. Finally, avoid public predictions of success ahead of any actual achievements – ensure there is room to adapt and react to user ideas and be careful not to 'scare off' potential contributors.[19]

For any twenty-first-century archive, considerations relating to user participation, the volume and mix of material, creation of metadata, finding aids, and preservation and access issues, must all loom large in any planning and management. For one archive, very much a creature of the new millennium, these considerations figured in the forefront of its establishment and ongoing development, making it a particularly interesting case study. The impact of the events of 11 September 2001 on the United States of America, and the world more generally, has been far-reaching (author Martin Amis talks of the 'many deranging consequences of September 11').[20] The need to document and record what happened that day quickly became seen as important for both historical and contemporary reasons, to help better understand what had happened and its impact.

The 9/11 Archive

The Centre for History and New Media at George Mason University (Washington, DC) is partnered with the City University of New York (CUNY) in the American Social History Project which for 25 years has aimed to promote:

> activities that challenge the traditional ways people learn history. Informed by the latest scholarship, we make the past, and the lives of the working people and 'ordinary' Americans who shaped it, vivid and meaningful.[21]

Given this focus, following the events of 11 September, it seemed logical that the project should somehow become involved in recording and archiving the events of that day and subsequent responses to those events, with an emphasis on its impact on the man-in-the-street.

Thus the idea for the archive arose within a couple of weeks of the terrorist attacks. Given the desire to set something in place as soon as possible, and the limitation of finding funding in the short term, it was determined from the very beginning that the only practical approach was to develop a virtual archive, containing no physical materials. In addition, it was decided that the emphasis would be on personal experiences of the event.

Some funding was made available to undertake the initial programming work to establish the database and its web presence. Since that time the software the team at George Mason developed using open source tools has been made available as Omeka[22] to anyone who wishes to set up similar sites. From its beginning in 2001, Omeka has now become a significant resource adopted by over 150 libraries, archives and museums to manage digital collections and create a public presence for them in a simple yet effective manner.[23] Institutions with Omeka installed range from the New York Public Library, to local history societies covering topics as diverse as Hurricane Katrina,[24] to the Reynolds Journalism Institute and its photography archive.[25]

This author followed the development of the 9/11 Archive over a number of years and was fortunate enough to be able to visit the creators and administrators of it at George Mason University in 2009, from which much of the information that follows was gathered.

The September 11 Digital Archive[26] started in December 2001 with staff 'seeding' the database with their own memories, reflections, photographs and art works. The establishment of the archive was announced via a press release, in which the public were urged to donate their stories, memories, photographs, rants, conspiracy theories, art works, poetry and impressions: no limits were placed on what could be included (as long as it was in a digital form).

Over the ensuing six months around 1,000 stories and images were added. At this stage it was felt that if 10,000 items were acquired it would be a success. But the first anniversary of 11 September saw an explosion of interest and contributions to the archive; it seemed that once it had reached a critical mass a snowball effect ensued with around 10,000 entries added in the couple of months around the anniversary. This also resulted in the site getting a high hit rate on Google with again, a self-fulfilling process whereby it always got onto the first page of any Google search for '9/11', thus exposing it to many more people. The creators at George Mason described this as 'the power of Google'. Over the next five years the size of the archive reached 120,000 items. As with any reliance on self-generated content, there arose some imbalances. Certain groups and individuals were heavy contributors, others who no doubt also held opinions, had stories to tell or concerns to express, either did not know about the potential of the archive, were not comfortable in offering contributions or did not care. In an effort to try and capture some of these under-represented groups, archive administrators targeted (usually via email but also through visits to schools and a range of community groups) various niche groups such as Muslim Americans and the local Chinese community, both of which were not well represented in the archive. As was expected, this targeting met with mixed success but did help bring in more material to the archive that represented a wider range of viewpoints. As at 2009, the archive contains 150,000 digital objects.

Formal recognition of the importance and credibility with which the archive was viewed was its acceptance by the Library of Congress in September 2003 as the first major digital object to be acquired for 'permanent' preservation. This followed from discussions between the archive administrators and the Library of Congress in regard to the long-term preservation of this resource. Being established late in 2001, checklists[27] such as those developed by the National Archives and Records Administration (NARA) and the Research Libraries Group (RLG) relating to trusted digital repositories, and the long-term preservation of digital data, were not available. Thus, the 9/11 Archive did not implement some of these approaches when developing their archive, and relied on the Library of Congress to take on the preservation role for the archive while they manage access and acquisition. This split

of responsibilities or partnership seems to offer a possible model for other digital archives established outside of the mainstream archival or repository world.

The contents of the archive include voice mail recordings, emails, small amounts of video (this was pre-camera phones for most people), photographs (digitised), stories and recollections, some official papers, for example, engineering reports into why the buildings collapsed as they did, copies of plans and some of the inquiry reports. It does not include the network broadcasts. As part of the lodgement process, donors have a choice of making material freely available to anyone searching the archive or to restrict its use to registered researchers. However, they also agree to the following:

> Your submission of material constitutes your permission for, and consent to, its dissemination and use in connection with the Archive in all media in perpetuity.[28]

Under these terms of service, contributors indemnify the archive against any liability arising out of their material. The terms are simply stated, in plain English, taking up about a half page, could be described as very user-friendly and are specifically written to inform without deterring potential contributors.

As well as promotion of the archive via the Web and 'the power of Google', a 'share your memories' program was launched in conjunction with local public libraries where people were encouraged to submit their memories or memorabilia: written on pre-prepared cards which were then scanned in (about 50,000 received); through a telephone voice recording system (about 6,000); or, directly through an Internet connection (just a few hundred). A similar approach today would undoubtedly see a major increase in the proportion of online submissions. Other materials felt to be relevant such as fliers, posters and photographs were actively acquired and digitised with the physical copies passed on to the Smithsonian Museum.

The ability of individuals to use their creativity in any way they felt fit has resulted in a wide range of stories, weird theories, personal photographs and, in particular, digital art, that has given the archive an exciting and vibrant feel.

Implications

For collecting archives focusing on non-government and non-business related records, the introduction of digital archiving offers real potential to acquire a broader range of materials, expand into related areas, and build stronger links with their client base. The past focus on the technological challenges of establishing and maintaining such archives is perhaps of less concern today. Standards and guidelines have been developed, software is readily available and partnerships such as those between the 9/11 Archive and the Library of Congress seem to offer real potential.

In addition, policies and procedures have been developed by many organisations and are widely available via the Internet; software platforms have been created and protocols established to build trusted digital repositories and there is now considerable experience of the ingest and capture process. With information technology expertise, and modest hardware and software expenditure, the functionality necessary to set up or further develop a small to medium scale digital archive is within the capabilities of even small organisations that would have found it difficult to manage an archive of more traditional materials. Also, ongoing costs are more predictable. If a Web 2.0 approach is adopted, whereby contributors to the archive create or expand the associated metadata, and curation or mediation by archive staff is limited or non-existent, then budgetary demands are again kept to a minimum, opening up opportunities for a wider range of organisations to create and make available their own web-based archive.

This approach of 'harnessing the enthusiasm of the creators', (or 'the rule of the mob' as Stephen Clarke suggests it may be[29]), if coupled with little or no mediation, will inevitably lead to an archive evolving in unpredictable ways. Whether this is an issue or not for the archive 'owners' has to be considered at an individual level. The price for getting unfiltered public input is accepting that it will be wide ranging and no doubt contradictory and arbitrary. There are likely to be individuals with strong opinions who may wish to promote their own viewpoints and agendas which could skew the archive's holdings. Stephen Clarke[30] goes on to make the valid point that only a tiny percentage of those who may access the archive are ever likely to post material, add

tags or otherwise participate. What does this mean for its authenticity, reliability and accuracy? Essentially it will mean that the records in this archive cannot be relied upon, that it will be a case of *caveat emptor*, and that if authenticity, realiability and accuracy are crucial to your fundamental mission as a business or government authority, then this is not the approach to adopt. The traditional appraisal approach enunciated by Schellenberg[31] and others plays no part in building such collections.

But, if your mission is to document an event, activity or social phenomenon where traditional concerns relating to the 'correctness' of information and its provenance are not fundamental to the very nature of the records held, then this will probably be an acceptable methodology to adopt. Indeed, the very nature of an unmediated collection, free from external 'interference' (however well-meaning) in determining its shape and contents may well result in collections that portray events or activities in a different light than that proposed by accepted, establishment views. Lacking the filtering process of professionals learned in appraisal theory, following developed policies and guidelines put in place by those working within a received paradigm of what has status and what does not, means that the resultant holdings, while they may in all likelihood be idiosyncratic and biased in many ways, will certainly portray a range of unorthodox viewpoints potentially of real value to future researchers. As the author has noted elsewhere,

> the shape of existing collections can be seen as representing a particular world view at a particular time. Collections are not 'neutral' but reflect the society which created them.[32]

And generally, the society reflected has been that of the intermediary (probably middle-class, well-educated, with a liberal arts background) tasked with identifying worth or not. The unmediated archive's holdings will inevitably reflect a broader range of viewpoints, be less homogenous and could possibly comprise material that represents the thoughts and feelings of those who would usually have no dealings at all with the archival/heritage world.

In order to assist in providing balance, it may be useful for programs to be undertaken to gather alternative contributions to try to ensure a broader perspective is acquired. In the end, it is up to the archive to

decide what it can manage within its limited resources and whether it wants to influence the shape of the collection. Again, how much is it concerned about appraisal, selection, deselection, authenticity, integrity, controlled vocabularies, classification and the like? With the removal of the practical limitations imposed by a physical archive, is it acceptable to open up the archive to any or all, allowing the sheer volume of material to help ensure that a balance of views is represented? There can be no right or wrong answer; the Web 2.0 approach is just another option for creating archives, offering up opportunities that would not otherwise exist but at the same time, bringing with it limitations that have to be acknowledged and where possible, worked around.

Over time it may well be that variations on this approach will be adopted widely in order to build up resources targeting specific events such as 11 September (a recent Australian example is the 2008 bushfires in Victoria),[33] complementing official records held and managed in more traditional institutions with their concerns over validity and authenticity that cannot be controlled in the 'free for all' approach described above. As long as it is clear to all users (and contributors) that this is the basis upon which the archive has been established, it would appear that the Web 2.0 approach to establishing and running an archive is a viable option in appropriate situations.

Endnotes

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