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Is technology enough?

Developing archival information systems in community environments

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Introduction

Knowledge is all the information that is required for a community to survive - philosophy, law, lore, records of the past, and practices and procedures to care for the land and community. It is everything. In order for this knowledge to be passed on to each generation, the knowledge and its form of transmission need to remain intact.

Numerous communities have been seeking methods by which to keep their knowledge intact and cope with the ever growing amount of material that they have created and gathered over time. This may include material held at a number of institutions, as well as material under their own control. It may incorporate records, as well as artifacts and resources, that link the present with the past. Communities are keen to actively pursue, preserve and control their own knowledge about their records and are keen to see their own stories and voices represented in discovery and access systems. They also wish to play an active role in the preservation of their records. At the same time archival institutions are increasingly wishing to accommodate a diversity of views within their systems and ensure materials in their custody are relevant and accessible to as wide a community as possible. However, fostering multiple views and uses in the archival process is not necessarily simple and is presenting developers of archival systems with some interesting challenges.

The development of archival systems capable of documenting and managing multiple recordkeeping perspectives is an emerging topic of discussion in the archival community.[1] Developments in information and communication technologies seem to be leading to such possibilities becoming realities. But is technology enough? What are the issues for small archives and other community organisations seeking to adopt information and communication technologies for describing and managing archival resources? How is the necessary trust established in computer applications so that they will be developed, used and maintained? Can systems designed for use in larger institutions be adopted? What are the difficulties in establishing systems that capture alternate views of records held in other archival institutions? What should be the role of

government sponsored institutions in fostering, developing and sustaining such initiatives?

To discuss these questions this paper will draw on the experiences of the authors in working with archival systems in small archives and community environments, encompassing both archivist and community perspectives. We will describe some of the experiences of Victoria's Indigenous community in seeking to develop appropriate archival systems to access, manage and control community knowledge. We will discuss the development of applications based on the Australian Series System at the Australian Science and Technology Heritage Centre aimed at addressing the archival automation and documentation needs of community organisations. We will examine their implementation in order to identify practical factors that influence the introduction of such information technologies. We will also discuss the need for further research in this area to identify and articulate needs, particularly in relation to Victoria's Indigenous community, in order to foster the development and implementation of appropriate technology.

Indigenous communities

Impacts of colonisation

The impact of colonial actions within Victoria, Australia, had, and continues to have, devastating and far reaching consequences. One of these has been the distancing of Indigenous people from their land, cultural knowledge and practices, and their history. Government archives document those actions, and while they contain records of significance to Indigenous people, these can only be accessed via tools that place them in that colonial context.

For hundreds of generations prior to colonisation of Australia, Indigenous knowledge was transmitted to the next generation orally and pictorially through art and drama. "This was achieved through the use of stories and songs and by visual tools – such as rock, sand and bark engravings, and by dances and ceremonies".[2] This form of knowledge transmission was one of the practices that colonisation in Australia attempted to destroy.

Colonisation introduced strict control on every aspect of Indigenous life. Many of the cultural practices that where inherent in Indigenous lifestyle were banned, including language, song and dance. Indigenous life was disrupted. Because of these bans much of Indigenous traditional life was lost – including languages and oral traditions. This loss has lead to the belief that all Victorian Indigenous knowledge was lost forever. This is not the case. Despite the actions of colonisation, Indigenous oral tradition continued

During the initial period of colonisation[3] attempts by Indigenous people to share knowledge with the newcomers was not always welcome. This could be linked to cultural differences, language and format of the knowledge (i.e. not being in an accepted written form). This led to Indigenous communities quickly adopting writing as a form of expressing their needs and communicating with those that controlled their lives. Ian Anderson has noted that "The written text has been employed by Indigenous Australians as a mode of political and cultural self-representation from quite early in colonial history – it is not a new phenomenon".[4] Ginibi has a slightly different twist: "because we Aboriginal people came from an oral tradition it is we who always had to conform to the

standard of the invaders, and learn the Queen's English so you mob out there can understand what the hell we are on about".[5] Despite the differences in these points of view both of these Indigenous authors are saying that the use of written text was a method of survival. So, whilst colonisation attempted to stop the continuation of oral traditions, it also led to the development of Indigenous adoption of the written record.[6]

The use and creation of written records

Some Indigenous knowledge that was lost to oral tradition has been located in the records created by the colonisers. These written records have not only been found to contain cultural and personal information, they also include documentation on the policies and procedures of colonisation in regards to Indigenous people. The knowledge retrieved from the colonisers' records has, and continues to be, incorporated, into Indigenous knowledge.

The rebuilding or reconstructing of Indigenous knowledge is important to the redevelopment of Indigenous identity within Australia:

> Where traditions have been abandoned or lost, people of Aboriginal descent have had to reconstruct them. "You build Aboriginality, boy, or you got nothing", Grandfather Koori told Kevin Gilbert. Much of what is now being incorporated as Aboriginal cultural knowledge in settled Australia is the result of historical research, acquired rather than inherited. "Most of our knowledge", says Robert Murray who grew up on the Cowra Mission in New South Wales, "comes from books, or from the screen, or from what people tell us. Not from our own people". For many Aborigines, part of the attraction of family history is that it becomes local history, offering a route back to ancestral lands.[7]

With the introduction of oral history technologies in the 1940s, researchers of Indigenous culture began making recordings of Indigenous knowledge. Whilst oral history created an avenue for Indigenous communities to have their historical records and knowledge heard and incorporated into mainstream records, the interpretation of their knowledge was still being conducted by non-Indigenous people. This has meant that the knowledge had changed perspectives, and at times, meaning. This led to

Indigenous communities developing ways in which to record and interpret their knowledge on their own terms.

Indigenous communities and individuals began to use recording technology to record their own knowledge for future generations. Initially, the recording of this knowledge was out of fear that knowledge was being lost: "However, today we still have an enormous depth of oral history, traditions and philosophy, which are stored mainly by our elderly people. As a result there is now an extreme urgency to record this valuable information before we lose any more, so that it can be retained for the following generations".[8]

Indigenous incorporation of writing and oral history recordings into their ways of transmitting knowledge has meant that communities are producing documentation – original records, interpretations of newcomer records, legal documentation, records of the establishment of organisations, and various media formats of recordings. This documentation needs to be preserved and made accessible for future generations. Ways of achieving this include the donation of material to existing Archives, the creation of archival collections, or even the development of an Indigenous Archive.

Communities and archives

Indigenous communities, along with other community groups, have been seeking the ability to consult and work with archives regarding their collections for many years. For one of the authors of this paper, this consultation has been ongoing for some time now. It was not, however, until the Indigenous salon at the 2004 International Council on Archives conference that it clicked that archivists are also seeking ways in which to work with Indigenous communities – they just do not know how yet. It is difficult for two cultures to work together when their world views are slightly polarised, but it does not mean it is impossible. This section explores some of the issues faced by other cultures, especially Indigenous, in accessing existing archival collections. It is hoped that this will inform archival professionals and support other minority groups in their endeavors.

Indigenous people adopted the written word early in the colonisation process; however, their use of the colonisers' collections of knowledge was severely limited due to the lack

of knowledge of their existence and accessibility. These collections include libraries, museums, galleries and archives. Government and religious archives, in particular, document the past events of the control and destruction of Indigenous people, land and culture. With the realisation that there were personal records concerning individuals, families and communities contained in these archives, Indigenous people wanted access.

Accessibility has always been an issue with archives. In some situations the collections sought have not always been publicly accessible; however, the main accessibility issue has been the whole nature and environment of archives. Archives have been, and in some cases continue to be, a totally alien environment, with processes such as catalogue systems, silence, not having food or drink, and having to ask a stranger for help – procedures that make repositories daunting and inaccessible. Over the years this has been changing, with new generations learning about libraries and archives and supporting their Elders in accessing records, and through the developments of archives in making themselves more accessible.

Another issue of accessibility has been distance. Family records from the missions and reserves can be located in another town, state or country, sometimes making accessibility impossible. Although archives are attempting to make the records in their custody[9] more accessible, this does always not help individuals cope with the information contained in their records.

The other side of accessibility has been the access to personal records by people other than the individual or family. Archives, in accordance with their own regulations and procedures, grant access to records in their custody – including records that contain personal information. This access is a cause of distress for many in the Indigenous community. Records of a personal nature have been made accessible to researchers without the individual or their family even knowing of their existence. From these documents, books and legal cases have been produced – and the first the family has any knowledge of these records has been through reading the book, or in the courtroom.

Many archives have restrictions on accessing personal records, where they are not accessible till after a certain period of time. This is viewed as a way of respecting and protecting the individual. However, with Indigenous records there is material that is

sensitive; records that are false; and records that are of a racist nature. Individuals have been reduced to tears reading records on themselves or their family that have either been racist in their language, of unknown events, or have contained barefaced lies. Some have reacted by wanting the records to be destroyed or removed from public access; or at the very least that they be allowed to make addenda to the archival record. Indigenous access of these records has been hampered by the inability or inflexibility of archives to address incorrect and offensive records.

Many of the archives in Victoria that contain early contact records are a product of the colonisers' process of recording events and knowledge. Although ownership of these records belongs to their producers, there needs to be recognition that the production of these records took place during a period when Indigenous people did not have the opportunity to address the colonisation processes and actions, and that the ability to address these processes and actions should be made available now. A process to enable this would be consultation with individuals, families and communities as to how these records should be accessed. It comes down to cultural ownership and control of how our narratives are presented. As Ruby Langford, an Indigenous author, so eloquently puts it

> The Issue is control. You seek to say that as scientists you have a right to obtain and study information of our culture. You seek to say that because you are Australians you have a right to study and explore our heritage because it is a heritage to be shared by all Australians, white and black. From our point of view we say you have come as invaders, you have tried to destroy our culture, you have built your fortunes upon the lands and bodies of our people and now, having said sorry, want a share in picking out the bones of what you regard as a dead past. We say that it is our past, our culture and heritage, and forms part of our present life. As such it is ours to control and it is ours to share on our terms. That is the Central Issue in this debate. [10]

Colonisers, or invaders, have been the dominant culture within this country and their voice has taken control of the cultural memory. Indigenous and minority communities are changing this through the inclusion of their knowledge and narratives of the past into Australia's cultural memory on their own terms. This sharing of knowledge will provide those cultures that have been silenced in the past with opportunity to use cultural memory as a way of rebuilding their cultural

identity.[11] One way of sharing knowledge is through the development of systems that document and make accessible that memory, both within a community and to society in general.

Archival documentation systems

Archival documentation systems control and organise knowledge. In response to calls from Indigenous and other community groups for archives to be more inclusive and responsive to their needs, many archivists have been discussing the need to incorporate into their systems and processes the capacity to document, manage and take account of multiple recordkeeping perspectives.[12] In the Australian context, such capabilities are viewed as a logical extension of descriptive practices based on the Australian Series System, and in line with the conceptual framework of the records continuum.[13] In such a framework records are viewed 'as active participants in business processes and technologies, dynamic objects which need to be associated throughout their life span with ever broader and richer layers of contextual metadata in order to maintain their reliability and authenticity, and to be meaningful and accessible through time and space'.[14] Capturing these layers of context through archival description processes maintains the evidential integrity of records and plays a vital role in making them accessible and meaningful outside of their originating systems and structures. However, records don't sit frozen in our archives, but continue to accrue layers of meaning as they are discovered, used and re-used. The records continuum framework envisages integrated recordkeeping and archival systems, capable of presenting views of records and recordkeeping that encompass operational and archival environments, as well as transcending organisational and institutional boundaries.

The Australian Series System

In establishing the archival documentation processes of the Commonwealth Archives Office, forerunner to the National Archives of Australia, in the late 1950s, Peter Scott recognised the multiple legal, functional and organisational contexts in which records are created and used, as well as the ever changing nature of the relationships between these contexts, and between records and these contexts.[15] He rejected the record group as the unit of description for failing to adequately represent the complex realities of recordkeeping that exist in and through time.[16] Instead, he conceptualised what is known as the Australian Series System, which separately documents records, organisational structures, functional contexts and the relationships that exist between each of these

entities. Logical views of records and contexts are created by combining these descriptive units together via their relationships. Approaching archival description in such a manner allows for the efficient documentation and representation of the complex networks of entities involved in recordkeeping processes. It provides a robust management framework in which multiple views of records and their contexts can be represented, and supports ongoing change with the capacity for new entities and relationships to be added as they arise.

Archival systems at the Australian Science and Technology Heritage Centre

Over the past decade, archivists at the Australian Science and Technology Heritage Centre (Austehc) at the University of Melbourne have created two archival documentation systems based on the principles of the Australian Series System. The Heritage Documentation Management System (HDMS) is a tool to support the archival processing and management of records, while the Online Heritage Resource Manager (OHRM) is a context-based resource discovery and access system linking contextual entities, archival and heritage resources, and published materials.[17] The HDMS reflects other implementations of the Series System in Australia and is focused on documenting creation and custodial relationships between records and contextual entities. It allows for the documentation of records, series, and the corporate bodies and persons associated with their creation and use, and the assemblage of these descriptions into finding aids. The OHRM on the other hand allows the user to build their own ontology of entities and relationships associated with resources. Resources may include archival material at any level of granularity, published material and digitised objects. Documentation from the OHRM is publishable as an integrated set of web pages, which places the resources in a navigable contextual network.[18]

The OHRM was initially built as a tool to manage a knowledge network for the history of Australian science.[19] The focus was, and still is, to document resources of relevance from the perspective of the scientists and scientific organisations involved in the making of Australian science. The aim is to garner intellectual control through describing the resource from the perspective of the knowledge network rather than simply replicating custodial descriptions. Included in the resource description is information about where

material is held, along with any controls the custodial institution uses to manage it in order to facilitate access. The advent of the Web has made this task easier and more exciting. The information can be published as an integrated set of web pages, with 'active citation', allowing a user to move between different frameworks in which a particular resource is documented via hyperlinks. This model has proved very effective and there are a number of archival and other gateways utilising the system for documenting resources from their particular viewpoints.[20] Publication on the Web also has a democratising effect, with the community view able to co-exist with the institutional view and be as, or in some cases even more, discoverable and accessible. [21]

Both the OHRM and the HDMS have been made available to other organisations using an 'open source' model.[22] Such a model allows small archives and other community groups to utilise archival documentation technologies without large upfront purchase fees or the need for expensive and lengthy development projects. The model can also help to foster a diversity of archival documentation and dissemination activities, and to put the control of such activities in the hands of those communities themselves. Communities need to maintain control of the knowledge surrounding their resources in order for their stories to be heard.

Austehc has been involved in a number of collaborative projects utilising these tools in a variety of different subject areas and environments. Some of these include:

- The use of the HDMS by the South Australian Museum to document their anthropology collections and produce online finding aids, in particular for the records of anthropologist Norman Tindale (1900–93).[23]
- The use of the OHRM by the Indigenous Studies Program at the University of Melbourne to create an online gateway representing the complex network of Indigenous peoples, representative bodies, businesses, government agencies, and legal instruments involved in agreement making. This gateway – the Agreements, Treaties and Negotiated Settlements (ATNS) project – is designed for use by Indigenous and other community organisations, researchers, government and industry bodies.

- The use of the OHRM to build the Koori Health Research Database, a collaborative project involving the Koori Health Research and Community Development Unit at the University of Melbourne.
- The use of the OHRM at the Victorian Aboriginal Language Corporation to provide a view of resources held in institutional archives from the perspective of aboriginal language groups.
- The initial use of the OHRM within the Trust and Technology project to aid in mapping the research framework.

These projects have had varying degrees of success. While the conceptual model of the Australian Series System provides a powerful and flexible framework in which complex knowledge networks associated with resources can be represented, the technology is not enough. Access to technology and appropriate tools can help, but there are other factors impacting on the introduction of information technologies for archival automation and documentation into small archives and other community organisations. Austehc's own experience of both being, and working with, organisations of this type can help to identify those issues.

Community contexts

Community organisations and small archives exist in community contexts. Unlike larger government archives, they lack legislative mandates and the institutional imprimatur that those mandates bring. Archival processes and technologies from these institutions reflect that context, and therefore may not necessarily be directly translatable to other environments. Community organisations and small archives need methods and tools that respect archival principles, but also fit the economic and political environments in which they are situated. In turn, larger institutions need to be aware of where and how in their own systems they can support the needs of these types of organisations.

Differing perspectives

Descriptive practices in government archives are based on dealing with kilometres of records and on documenting them within a fairly homogeneous framework. For government implementations of the Series System in Australia, the focus is on documenting series of records linked to their agency and functional context. Item level description is very brief and relationships are prescribed as controlling/controlled and previous/subsequent.[24] In community contexts, this may not be applicable. There is a need to document records from different perspectives to those which prevail in the government sector, as well as the need to highlight different relationships.

The use of the OHRM in a variety of projects has shown that the Series System model can be extended to allow for different types of entities and relationships to be defined, rather than just working with the narrow strictures of those used for government archival control. This allows for the creation of different ontologies in which resources can be situated. Future development plans would see similar functionality being incorporated into the HDMS, so that the archival management system itself can encompass these different viewpoints and allow them to play a direct role in the processing and management of the records.

As well as requiring different contextual entities and relationships, item level descriptions in community environments may need to be more extensive. These organisations may

also need to cope with a greater diversity of inventory items, including dealing with items "not usually placed in archival custody".[25] In constructing the HDMS for documenting the personal records of Australian scientists, the need to allow for more extensive documentation at the inventory level was recognised at a very early stage. Implementations of the Australian Series System in government archives tend to have minimal fields for inventory items, whereas in the HDMS, fields have been made available for documenting inventory items in much greater detail. This reflects both the nature of the records and the needs of users. Personal records, in general, are not managed within the relatively strict records management regimes found in government. What tends to survive for the archives are remnants or 'slivers'[26] from many recordkeeping systems. Series are used to reflect more general groupings of records rather than attempting to reconstruct the detail of those records systems, so the focus turns to documenting the surviving items to a greater level of granularity to facilitate understanding and use.

In personal record collections there is also the potential for a much greater diversity in record format and type. So the ability to identify particular formats and genres of records and other objects at the inventory level has been built into the HDMS system. From a format perspective this aids in their physical management, and from a genre perspective, perhaps, this helps provide a trace of functional context. In the first instance, this was accomplished with the creation of a format list that was incrementally added to as various processing projects were undertaken. When the South Australian Museum started using the HDMS for the documentation of Norman Tindale's records, the scientific based format list was not appropriate, so functionality was developed to allow customisation of the list to suit the needs of the records being documented.

Figure 1 Screen shot of formats in the HDMS

Custody and control

While archival management systems that are more sensitive to the needs of community collections are useful, a major issue for many community organisations is to maintain knowledge of and connection to resources over which they may not have custody or ownership. This may include resources held at other institutions and may also include distributed ownership and custody within the community itself. Communities therefore need systems that can document ownership and custody of materials and that can interface with the systems of custodial institutions.

The Koorie Heritage Trust Inc. has faced this issue of providing access to material not under their physical control. For many years Indigenous culture and history has been written from a newcomer[27] perspective. Organisations such as the Koorie Heritage Trust (the Trust) have taken on a role of presenting Indigenous knowledge from an Indigenous perspective. When they decided to create an electronic database to help the reconnection of members of the Stolen Generations[28] with their family and community, it was decided that it should encompass more than just the material in the custody of the Trust. It was felt that if they could negotiate with public repositories for digital copies of certain documents and images, then the archive could also act as a form of repatriation of material – material that many within the Indigenous community did not even know existed.

To achieve this, the Trust developed relationships and Memorandums of Understandings with institutions such as the State Library of Victoria, National Archives of Australia, Public Record Office Victoria and the South Australian Museum. These institutions allowed items from their collections to be copied and made accessible to the Indigenous community via the Koorie Archive. So, whilst the institutions kept ownership of the original, permission was given for the digital copy to be used and copied for personal use within the Indigenous community. In return, the Koorie Archive project would provide information back to the repositories, such as names of people in photos, and details regarding documents. This has meant that the community organisation, the Trust, does not have the issue of storage and preservation of these items – a cost that they may not be able to cover – but have control over the accessibility of the digital image.

The Trust's systems therefore need to have the capability to maintain an ever-evolving knowledge network which places distributed resources within the contextual framework of the community to facilitate and control their accessibility, hence their interest in and involvement with furthering research in this area.

Economic imperatives

Leveraging existing infrastructure

The focus on maintaining intellectual control over resources rather than physical custody stems in part from major economic differences between institutional archives and community organisations. Funding for community organisations is usually short-term and contingent on continued political support and relevance to their stakeholders. Economic necessity means that there is a need to focus on how to build interfaces to existing infrastructure rather than attempting to replicate it.

These economic imperatives have informed the development and deployment of the OHRM. It encourages identifying and citing existing resources of relevance rather than attempting to replicate them. Precious resources may then be focused on adding value by contextualising these resources into new knowledge frameworks. An example of the impact of this can be seen with the Agreements, Treaties and Negotiated Settlements Project noted above. In its initial conceptualisation it planned to publish copies of

agreements. However, when it was found that other bodies, like the Native Title Tribunal, were publishing the agreements, using the OHRM enabled citations to these existing agreements to be incorporated, freeing up resources to focus on documenting the network of relationships associated with the agreements. As other organisations saw the value the project was adding in providing an alternate gateway to their resources through these networks of relationships, exchanges of data were organised to further improve the efficiency. Leveraging the existing infrastructure allowed the limited resources of the project to be deployed efficiently and in turn the project itself has become a valued part of the infrastructure.

Of course, the ability to leverage existing infrastructure in such a way and capture alternate views of resources relies on the development of open and citable online systems. Archival institutions need to see themselves as part of a community network and build such systems – in the first instance to allow others to connect to them, but then to see how their own systems can connect out to others. Network technologies can make this possible, and with discussions of persistent identifiers, URIs and digital object identifiers there is also the opportunity for these networks to become automated and dynamic.[29] If unique persistent identifiers are made available, then institutions can send out spiders to find out what external online resources reference their descriptions and resources. These connections could then become part of the institution's archival documentation system and, as well as being made available to end-users, be factored into other archival processes. For example, such connections could form part of extended appraisal frameworks and become a mechanism for managing shared ownership.

One concern with investing in online systems is that they may be lost once a community organisation no longer has the funding to maintain them. The National Library of Australia (NLA) partially addresses this concern through the development of the PANDORA project, which archives 'significant Australian online publications and web sites considered to be of long-term research value'. [30] This project illustrates how digital technologies can be used to allow community based documentation systems to become part of an institutional archive.[31] Although records relating to an online project's construction, management and maintenance, dialogue with the community, and items held in its archives may be lost, its output will survive. For some projects this may be an

adequate preservation strategy but for others more may need to be done to ensure that the archive itself survives.

Coping with uncertainty and change

Economic conditions can also lead to a heightened state of flux within community organisations. Systems must be able to cope with change – personnel come and go and priorities shift in response to funding opportunities. Documentation systems must be flexible and adaptable and must also be able to cope with incomplete information, where there may be gaps and holes which can only be filled when the requisite resources become available. Also, in many small organisations IT services are minimal to non-existent, so systems must also be able to survive with minimum technological support. If these needs are not addressed, community organisations tend to rely on the builders to maintain the system on a day-to-day basis – a situation that neither party can afford to undertake.

An archival system must be flexible enough to support the whole work process, not just dissemination activities, and must be able to deal with records that have undergone various degrees of processing. As it may be many months, or even years, between when records are first seen and surveyed to when funds to support their processing becomes available, the system must be capable of capturing knowledge as and when it arises. This knowledge can in turn be used to produce the reports that can help in the pursuit of funds to support further work. In the development of the HDMS, Austehc has addressed this issue by building an archival management system from which finding aids can be produced, rather than being just a system to produce finding aids.

Developing the HDMS as an archival management system has led to investigations of how digital photography can be applied to aid archival processing. At the survey level this has involved building a module that allows for images to be associated with textual descriptions of records as they are first encountered.[32] At the inventory processing level this has involved adapting the National Archives of Australia's imaging for access strategy.[33] With limited resources available for processing collections, digital photography can be employed to speedily capture images of records that can be made available as part of the finding aid. This supports the immediate use of the records. More detailed textual

descriptions can be incorporated into the finding aid based on the actual usage of the records, which, again, technology can track.

Limited technological support

Technology can deliver efficiencies – but only if it is adequately supported and implemented. As a self-funded organisation Austehc itself is an example of this. Austehc continues to survive on the success and relevance of its work, and needs to operate as efficiently and effectively as possible. There was recognition early on that technology could deliver some of these efficiencies, so in the early nineties staff began to experiment with PC and database technologies. The attitude to taking on technology has been one of cumulative and practice driven development. It is not about conceptualising the perfect system, but about delivering systems to get the job at hand done.

This bottom up approach is in contrast to the top down one adopted in the recent ICA-UNESCO OSARIS project to develop freely available open source software for establishing electronic finding aids. While a draft set of functional requirements for archival description and retrieval software was developed, the project team concluded that actually producing the software was fraught with difficulty, given the variety in archival traditions and the numerous tools already available.[34] It was also felt that the ICA faced economic issues shared by many archival organisations, in lacking the resources to develop, maintain and enhance the project/software over time.

It was disappointing that the OSARIS project came to this conclusion, but not surprising. The functional requirements are over specified and represent an ideal that could never be met in the community contexts in which such software would operate. In seeking to develop yet another system rather than looking at how to foster collaboration in the existing developer community, the project demonstrated a lack of understanding of the nature of open source developments. Open source products are built in layers and modules of functionality and require their own sense of community to foster and encourage development.

For Austehc, a key aim has been to provide systems that require minimum technological support. Microsoft Access is the chosen platform due to its relative low cost and the ease

with which it can be supported on a desktop PC. Some experimentation with open-source alternatives has been undertaken, but at this stage the technical support required for such technologies is too high. Web outputs from the systems based on the generation of simple and static html files have been devised that do not require any complex server configuration in order for their Web publication. The experience of developing dynamic functionality has shown that the technology is not at a stage that can be easily supported by non-technical users. In many collaborative projects Austehc has stepped in to provide dynamic services to provide more complex access pathways. Experience has taught us that a key step in implementing systems is to identify the constraints on IT infrastructure and support in the initial setup, and to either attempt to work within them, improve them, or, in the extreme cases, to work around them.

Ownership

Appropriately constructed and deployed technologies can deal with some of the economic constraints within community organisations, but there are also issues to contend with regarding the ownership and control of both the archives and the archives system. Who owns and who controls the system? The people who build it? The funding body? The organisation that contracted the system? Or the community for whom the system is built? How is ownership and control managed through time? In community contexts these issues can become quite complex as competing claims from various stakeholders accrue and change over time.

In government institutions issues of ownership and control tend to be more clear-cut. Ownership is controlled by legislation, with the archival body establishing controls through their regulations and procedures. In community organisations, the situation can be more volatile with the potential for ownership and control to fluctuate as funding changes. Differing and changing perspectives on the purposes of the archive and the archival systems within the community also need to be accommodated. The big issue continually facing community organisations is what happens regarding ownership and control when funding to support its archive and associated management system is no longer available.

Funding for community archival systems can come with conditions that impact on the physical and intellectual ownership of the documentation system itself. For example a funding body may claim ownership of the material and technologies developed with their funds, or insist on providing direction in its development. Whilst this is sometimes just a legal formality, some funding bodies have enforced their rights under the agreement to be involved, and at times, control the project. Some projects that Austehc has been involved with have temporarily suffered under conditions imposed by funding bodies. This has meant diverting resources into configuring the technology to deal with those restrictions and also some curbing of dissemination activities. Luckily, these restrictions have been confined to the short-term and have had no lasting repercussions on the availability of the systems.

The issue of funding in community contexts is a difficult one. Without adequate funding it is not possible for a community organisation to create an archival system, and yet even when agreements are met in regards to its establishment, questions then arise as to what happens when the community no longer has the resources to maintain it. This is a question faced by all community organisations in relation to their archival projects, particularly when funding bodies tend to offer establishment funding only. Community archives are only ever sustainable if there is some form of ongoing sponsorship, and this needs to be factored in from the beginning if efforts to establish them are going to be worthwhile.

Although no organisation wishes to contemplate the prospect of its demise, it is important to consider it a possibility and negotiate legal agreements to protect the archive and the archival system beyond the life of the managing organisation. We have already discussed how initiatives like PANDORA can archive online documentation, but the much more complex question is what happens to the materials making up the community archive itself? Depending on the archive, it may be appropriate for the system to go to another established repository. This leads to other questions, such as: Would another repository take the system and collection and under what conditions? Which repository would be appropriate? And will the community's rights regarding access and control be maintained?

Establishing trust

Technology therefore is only ever just a starting point. The key issue becomes one of establishing and maintaining trust: trust in the information systems so that they will continue to be developed, used and maintained, and trust between the organisation and the system's developers. Both successes and failures in the deployment of archival systems indicate that this is a very complex issue. In the main, successful deployment occurs when the utility of the system is demonstrated early on. People are then willing to invest in putting their content into the system, and the technology can play an empowering role. People then also care enough about the system to ensure that it is adequately supported and championed. Failures occur where the utility of the system is not adequately demonstrable to those responsible for its implementation and upkeep. This may be because it is not commensurable with the ways of knowing in the area in which it is being used or because it does not meld with the processes of information collection and management in the context in which it is being deployed.

The Victorian Aboriginal Corporation for Languages (VACL) project undertaken by Austehc is a case in point. The original vision of the OHRM system was 'sold' to a manager who subsequently departed, leaving the rest of the staff at a loss as to how the system fitted into their work processes. The content development to show how the system could be used to document the language groups and the archival resources that VACL had collected pertaining to them was undertaken by Austehc. It was therefore an outsider's view, and use of the system within the organisation has been minimal. There is no sense of ownership, and no trust. No amount of training, documentation or other tactics seem to be able to overcome the sense of imposition. There is agreement that the way the content is structured and presented is useful, but the spark that would see the system being utilised and developed is missing.

Austehc's experiences with developing and deploying archival systems in community contexts is useful in identifying some practical issues, but it does not address or examine the more fundamental needs of Indigenous archives. It points to the possible potential usefulness of the Australian Series System model, but as the VACL experience shows there needs to be better and deeper understandings of the requirements of Indigenous

community groups. One way of achieving this is through the involvement of the organisation and community throughout the project through effective consultation.

Community consultation

Communication with Indigenous communities has not always been effective and has often led to the development of programs and research that have been inappropriate for the Indigenous community for whom it was undertaken. Trust needs to be established. One way of achieving this is through the appropriate use of community consultation. This is a process where the community is involved in the development and creation of the project being undertaken. The project is working 'with' the community organisation instead of 'for' the organisation.

In regards to the development of a community archival system, the consultation process should not only involve discussions with members of the organisation, but with representatives of the community as to what material the archive will collect, who will have access, the storage and catalogue procedures to be used, ownership and control, and the underlying technology. The project should also include training for those who will be managing the project, so that they will be able to educate the users.

Consultation and training is also required to address the fear as to how the records that will be stored in the archive will be used. Past practices have seen Indigenous material used for purposes other than what they were collected for. This has been a cause for concern by individuals and communities about the recording and storage of their knowledge. This could be addressed through education in copyright and intellectual property laws, and joint development access regulations.

Developing trust in technology is also important. Archival systems can be complex and daunting for groups and individuals who do not use these systems on a regular basis. If effective training is not undertaken from the start of the project, then it could mean that a system will not be used, whilst early familiarisation could develop trust and develop vested interest in the project by the community with whom the archive is being developed.

Trust and Technology project

The issue of developing trust within a community in regards to the development of an archival system is being addressed in an Australian Research Council funded project titled *Trust and Technology – Reconciling Memory: Socio-technical Issues Affecting the Inclusion of Indigenous Oral Knowledge in Australian Archival Services*. This is a joint project between Monash University, Public Record Office Victoria, the Koorie Heritage Trust Inc., the Koorie Records Taskforce, and the Indigenous Issues Special Interest Group of the Australian Society of Archivists, and is being undertaken from 2004 to 2006.

This project aims to develop an archival system for Victorian Indigenous knowledge, premised on development of trust of archival systems within the Indigenous community. An important underpinning of the project has been the recognition of the impact of past archival practices on the Indigenous community and the development of an understanding of the current impact of those practices.

Another aspect of trust that this project is examining is how Indigenous communities deal with issues of authenticity and intellectual property in material held within archives, and in knowledge held within the community. This could provide important information on how Indigenous communities view archival material and the legal constraints that surround it.

As well as developing a culturally appropriate Indigenous archival system, it is possible that this project will also provide invaluable insights into some of the issues outlined in this paper, such as developing trust, and appropriate technology. It is also possible that the project will develop a model for other archives on working with minority communities, in particular Indigenous communities.

Where to?

For Indigenous and other community groups to continue in the development of their cultural knowledge and memory, then suitable access to and control of records is required. To achieve this we need to investigate how multiple viewpoints can be accommodated in archival processes and push for the development of appropriate archival systems in community contexts so that alternate voices can be documented and heard. All archives need to see themselves as part of community networks and develop open systems that foster and encourage connections. Technology can play a facilitating role, but its method of development and deployment must fit within the context it is placed. Technology has the potential to empower – but its potential to disempower must also be recognised. Harnessing technology can allow for the dissemination of knowledge, perspectives and viewpoints, and in turn develop rich cultural networks in which all can share.

[1] Sue McKemmish, Barbara Reed and Michael Piggott, 'The Archives', in *Archives: Recordkeeping in Society*, Centre for Information Studies, Charles Sturt University, Wagga Wagga, 2005, pp. 159–95.

[2] Wayne Atkinson, 'Oral History and Cultural Heritage', unpublished conference paper, Skeletal Remains conference, Aborigines Advancement League, Melbourne, 1984.

[3] There is a continuing debate as to whether colonisation in Australia has actually ended or not.

[4] Ian Anderson, 'Introduction: the Aboriginal critique of colonial knowing', in *Blacklines: contemporary critical writing by Indigenous Australians*, ed. Michele Grossman, Carlton, Victoria, 2003.

[5] Ruby Langford Ginibi, 'Voicing the land: ASAL Armidale', *Notes and Furphies*, October 1997.

[6] Atkinson, op cit.

[7] Tom Griffiths, *Hunters and Collectors: the Antiquarian Imagination in Australia*, Cambridge, 1996.

[8] Atkinson, op cit.

[9] Recent examples of this include the National Archives of Australia *Bringing Them Home Indexing Project*, where an index of Aboriginal names is being created, and the creation of the Koorie Records Unit at the Public Record Office Victoria.

[10] Ruby Langford, 'Our heritage – your playground', *Australian Archaeology*, vol. 16, 1983, p. 2.

[11] ibid.

[12] For example Jeannette Bastian discusses 'communities of records' in *Owning Memory: How a Caribbean Community Lost its Archives and Found Its History*; (Contributions in Librarianship and Information Science, no. 99). Westport, Conn.: Libraries Unlimited, 2003. Eric Ketelaar has discussed the concept of shared ownership and joint heritage in 'Communities of Records', paper presented at the School of Information Management and Systems, Monash University Melbourne, Research Forum, 23 July 2004. Chris Hurley has also discussed 'parallel provenance' in a paper given at Archives and collective memory: Challenges and Issues in the Pluralised Archival Role Seminar, 3–5 August 2004, organised by The Recordkeeping Institute in conjunction with the School of Information Management and Systems, Monash University.

[13] See McKemmish et al. op cit. for discussion of potential capabilities of archival systems of the future.

[14] Sue McKemmish, Glenda Acland, Nigel Ward, and Barbara Reed, 'Describing Records in Context in the Continuum: the Australian Recordkeeping Metadata Schema', *Archivaria*, vol. 48, Fall 1999, pp. 3–43.

[15] Sue McKemmish, 'Are Records Ever Actual?', in Sue McKemmish and Michael Piggott (eds), *The Records Continuum: Ian Maclean and Australian Archives First Fifty Years*, Ancora Press, Clayton, 1994, pp. 187–203.

[16] Peter Scott, 'The Record Group Concept: A Case for Abandonment', *American Archivist*, vol. 29, October 1966, 1966, pp. 493–504.

[17] More information on the HDMS can be found at http://www.austehc.unimelb.edu.au/HDMS/ and more information on the OHRM can be found at http://www.austehc.unimelb.edu.au/ohrm/ (accessed 18 April 2005).

[18] Joanne Evans, 'Exploring Bright Sparcs : Creation of a Navigable Knowledge Space', *Cataloguing Australia*, vol 25 no. 1/4, 1999, pp. 147–57. Paper presented at 13th National Cataloguing Conference, Charting the Information Universe, 13–15 October 1999.

[19] Development of the OHRM began in 1999 to make the system used to generate *Bright Sparcs* more generic. See 'Case Studies in Developing Standards–Compliant Archival Software – HDMS and the OHRM' presented at National Archives of Australia, International Seminar on the Use of Standards in the Development of Online Access Systems for Archives, Parliament House Theatre, 31 October 2003, available online from http://www.naa.gov.au/recordkeeping/rkpubs/papers.html (accessed 18 April 2005).

[20] Along with Indigenous projects noted, the OHRM has also been used to develop the Australia Trade Union Archives, http://www.atua.org.au/atua.htm, the Australian Women Archives Register, http://www.womenaustralia.info/register_home.htm, and the Guide to Australian Business Records, http://www.archivists.org.au/busrec/ (accessed 18 April 2005).

[21] Web resources created with the OHRM tend to achieve high rankings in Google due to the interconnectedness, openness and citability of simple static html pages. In contrast many archival institutions data is buried in databases which are not indexed by the Web search engines and so tend to remain undiscovered unless a researcher knows to search the institution's system.

[22] Both the OHRM and HDMS are Microsoft Access applications and are made available free (under licence) on the condition that they be used to provide information about archives, history and heritage on the Web (or via some other medium) at no cost to the user (i.e. non-commercial, heritage and public good purposes).

[23] Francesca Zilio and edited by Dr Philip Jones, *Guide to the Norman B. Tindale Archives*, South Australian Museum, 2000, http://www.samuseum.sa.gov.au/tindale/HDMS/Tindale.htm (accessed 18 April 2005).

[24] See for example *Record Search* at the National Archives of Australia, http://www.naa.gov.au/the_collection/recordsearch.html; Archives@Victoria at the Public Record Office of Victoria, http://www.prov.vic.gov.au/archivesvictoria/t1tbmain.asp and Archives Investigator at State Records Authority of New South Wales, http://investigator.records.nsw.gov.au/ (accessed 18 April 2005).

[25] Carolyn Hamilton, Verne Harris and Graeme Reid, 'Introduction', *Refiguring the Archive*, Dodrecht, Kluwer Academic Publishers, 2002.

[26] Verne Harris discusses how the documentary record is 'just a sliver of a window into the event' with archivists dealing with 'a sliver of a sliver of sliver'. Many of the personal record collections that Austehc has been involved in processing have indeed been just such minute traces of a scientist's life. See Verne Harris, 'The Archival Sliver: A Perspective on the Construction of Social Memory in Archives and the Transition from Apartheid to Democracy', *Refiguring the Archive*, Dodrecht, Kluwer Academic Publishers, 2002, pp. 135–51.

[27] 'Newcomer' is another term for non-Indigenous people.

28 'Stolen Generations' are Indigenous people who were removed from their families and communities as a result of government policy.

[29] For papers and reports from an ERPANET seminar in 2004 on persistent identifiers see http://www.erpanet.org/events/2004/cork/index.php (accessed 18 April 2005).

[30] 'Frequently asked questions about PANDORA', PANDORA Australia's Web Archive, http://pandora.nla.gov.au/panfaqs.html#scope (accessed 18 April 2005).

[31] Some OHRM-based online resources have been selected for archiving by PANDORA. In the case of *Lost Lives*, where the OHRM has been used to document records such as photographs, letters and other documents held in personal and institutional archives relating to the Second World War and the islands of New Guinea, the Australian War Memorial (AWM) has asked that this site be archived as part of its publication collection relating to the Australian experience and interpretation of war. Ironically the site includes digital versions of some items that were originally rejected by the AWM when offered for donation. When the resources are no longer available to maintain the site, it will exist 'in perpetuity' at the National Library of Australia. Given the nature of *Lost Lives* this is an adequate preservation strategy. *Lost Lives* is a hobby project of Joanne Evans. See: http://www.jje.info/lostlives/ (accessed 18 April 2005).

[32] For a discussion of accessioning in the HDMS see 'Application of New Archival Theory and Database Technologies', presentation at Archives and Reform - Preparing for Tomorrow, Australian Society of Archivists 1997 National Conference, Adelaide, 24–26 July 1997, http://www.asap.unimelb.edu.au/pubs/articles/asa97/ASA97Intro.htm (accessed 18 April 2005).

[33] See Ted Ling 'Taking it to the streets: Why the National Archives of Australia embraced digitisation on demand', National Archives of Australia, January 2002, http://www.naa.gov.au/Publications/corporate_publications/digitising_TLing.pdf (accessed 18 April 2005).

[34] ICA-UNESCO Contract n° 4500007305 Open Source Software for Establishing Electronic Finding Aids (OSARIS), Final Report, December 2003.