

Towards a Metadesign Approach for Building Indigenous Multimedia Cultural Archives

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Indigenous Australian cultures have experienced a revival in recent years as communities realise the value of recording their cultural heritage. Computer systems designed for Indigenous cultural archives, can play a role in storing Indigenous culture in multimedia formats such as video, sound recordings, photographs and text, and then making them available back to the community. This paper proposes a new approach to the design of Indigenous multimedia archives. Practice-based approaches to metadesign can be combined with Indigenous protocols to develop better systems for Indigenous communities. Using this approach it is possible to avoid “top-down” design methods and, instead, partner with Indigenous people in building authoring software with which they can construct their own cultural systems. By this means Indigenous Australians can gain control of a system which is suited to their needs, cultural traditions and protocols.

Introduction

The preservation and revitalization of Indigenous cultures is of major interest in Australia today. The process of colonisation and assimilation prevented the passing on of traditional knowledge from generation to generation in many Indigenous communities and resulted in the extinction of many cultural practices and languages. Today there are concerns that globalisation may contribute to this process still further through the colonising influences of dominant cultures on the Web (McConaghy, 2000).

However, technological advances provide opportunities to redress this issue. In particular, multimedia technologies offer a way of storing and displaying video, photographs and sound recordings and so fit with many characteristics of traditional Indigenous culture (Dyson, 2003). The latter is not a written culture, but founded in oral and audio practices (story-telling, ceremony, song and music) and also in pictorial cultural forms (paintings, sculptures and carvings). In recent years multimedia has extended to the development of Indigenous living cultural archives (also referred to as Indigenous multimedia knowledge systems). These allow culture and knowledge to be stored and then made available back to the community (Dyson and Underwood, 2006). Furthermore they provide a method of repatriation of digital copies of items held in museums and other collections back to communities (Hunter, *et al.*, 2003).

A number of Indigenous multimedia archives have been implemented in Australia as well as overseas (e.g., Hunter, 2002; Injie and Haintz, 2004; Hughes and Dallwitz, 2007). There are also several systems currently under development, still in the prototype phase (e.g., Leggett, 2005; Leavy, 2007; Chesselet, n.d.). Some of these systems have been more successful than others in addressing the various requirements of Indigenous communities. A major barrier is the complexity of design-

ing new systems which fit well with Indigenous knowledge concepts and protocols. Secondly, there is the cost of bringing in outside development teams to implement systems in remote communities, with further costs for ongoing maintenance and upgrades. Thirdly, some systems are hard-coded and so not easily adaptable from one community to another.

In this paper we propose a new approach to designing Indigenous multimedia cultural archives which, we believe, will address these issues. Metadesign is at the cutting edge of current design methodologies: it seeks to aid communities to solve their own design problems by providing them with the support to do this (Fischer, 1999). A metadesign approach will involve partnering with Indigenous communities in the design of authoring software which will allow Indigenous people themselves to create their own systems for storing and viewing their culture and knowledge. This will give Indigenous people control over their multimedia archives and produce systems which more closely reflect their cultures and needs.

In this paper a brief overview of existing systems is given in order to highlight the complexities that have to be addressed in the design of Indigenous multimedia archives. Then we explain how practice-based approaches to metadesign can be combined with Indigenous protocols to develop better archiving systems for Indigenous communities.

Indigenous cultural archives in Australia

The main requirements of Indigenous cultural archive systems can be summarised as:

- Appropriate to Indigenous culture, particularly its oral and graphical strengths;
- Robust enough to withstand the harsh environments where many remote communities live;
- Acknowledging Indigenous knowledge protocols, security concerns over who has access to secret or sacred knowledge, and intellectual property issues;
- Easy to use and navigate (given low computer literacy levels in many communities);
- Cost-effective (given the poverty of many communities);
- Allowing for diversity of communities and cultural evolution over time;
- Able to be placed outdoors at the locus of creative practice;
- Providing community control over contents and over design, development, implementation and maintenance.

None of the existing Indigenous cultural archives has managed to address all of these needs although some have succeeded very well with certain issues. For example, Hunter's Indigenous Rights Management System has implemented Indigenous knowledge concepts of access and intellectual property into its database through XrML (XML-based rights markup language) (Hunter, 2002). Another system, Ara Irititja has screens in colours appropriate to the central Australian deserts of the Anangu people who commissioned it, and is displayed on a mobile workstation which is heat-proof, dust-proof, mice-proof, has an uninterruptible power source,

and can be placed on the back of a truck and taken to wherever the community wish to use it (Hughes and Dallwitz, 2007). The Digital Songlines prototype has screens which are almost totally graphical and has moved away from the widespread “desktop” design metaphor to one which acknowledges the strong link between Indigenous people and the land (Leavy, 2007). Likewise the PathScape prototype uses video files of the land and has the advantage of simple navigation by gesture control of the screen cursor (Leggett, 2005).

One major challenge is placing control of the system in the hands of the Indigenous community. To date the most successful at achieving this are simple, cheap systems based on FileMaker Pro, where text-based lists of available multimedia items are presented to the user. Nyirti, used at the Wangka Maya Centre in the Pilbara, is an example of this (Injie and Haintz, 2004). However, these raise obvious problems when the population who will be using them come from a non-text-based culture.

A new approach to creating an indigenous multimedia cultural archive

The overall approach which we propose for the design of Indigenous cultural archives is practice-based. Practice-based methodology has resulted in highly successful outcomes and is well described in the literature. It consists of “...acquiring knowledge using sensitive methods for gathering and analysing necessary data” and, most importantly, must be deeply rooted in the actual context and experiences of the participants (Candy and Edmonds, 2002: 39-43). It is a “...creative production process [that] is self-conscious, rational and reflective” (Scrivener and Chapman, 2004). It is an approach employed frequently in the end user development of software tools and multimedia.

We propose focusing upon the early design stages of practice-based methodology, using metadesign as a conceptual framework. Metadesign is “...another species of design, where the artefacts being designed are themselves interfaces for designing – hence meta-design” (Lieberman, 2005). Metadesign takes up many known principles of good design within human-computer interaction, providing options for guiding the users’ design process.

The methodology of metadesign has been developed from theoretical and practical investigations in several international centres by a range of researchers (Lazarev, 1994; Maturana, 1997; Fischer, 2003; Fischer and Giaccardi, 2004). Metadesign is characterised by objectives, techniques and processes for creating interactive media environments. This has been achieved by researchers working closely and sympathetically with community groups that encourage participants to engage in the collaborative construction of artefacts and activities meaningful to the context of their production and usefulness. The relationship between the designers and the community group is symbiotic – researchers, skilled in electronic tools and their use, learn with community members how to organise cultural knowledge in the form of artefacts, oral narrative, performance, etc. The collaborative project becomes a “...creative process defin[ing] a ‘seed’ able to generate endless variations recognisable as belonging to the same idea but open to change” (Giaccardi, 2005: 345).

In Australia, Indigenous communities across the continent, whilst sharing

protocols of behaviour, exhibit wide variations in cultural forms and knowledge. Responding to this diversity, the design approach is a seeding process rather than planning exercise. Indigenous communities need a system open to adaptation and capable of responding to developments in technology and evolution in their own cultural practices. A new “praxis of design” will enable communities to develop their own computer-based systems as an aid to sustaining, growing, preserving and transmitting their culture to successive generations.

Using this approach “top-down” design methods are avoided and, instead, Indigenous people can become partners in building authoring software with which to construct their own cultural systems. By this means Indigenous Australians can gain control of the design process and achieve a system which is suited to their needs, cultural traditions and protocols. Providing the authoring tool is sufficiently flexible and able to be used by any community, it will have the power to build systems which truly reflect the varying cultures and knowledges across the country.

The metadesign approach will incorporate Indigenous protocols within the authoring system. These protocols are well documented and cover both traditional cultural protocols, and more recent media and archiving protocols (e.g., Janke, 2002; Museums Australia, 1998; Byrne, *et al.*, 1995). The incorporation of protocols into Indigenous multimedia archives is absolutely essential, given cultural sensitivities regarding the display of traditional knowledge and artefacts. Indigenous people have concerns over who has the right to knowledge and do not wish unauthorized members of even their own community, let alone outsiders, gaining access to material that is seen as sacred or secret, viewable only by the initiated or by people of a certain gender (Radoll, 2004).

The proposed metadesign operational methodology is anticipated to be characterised specifically by:

- User-centred and participatory design techniques;
- Rapid prototyping of coded modules representing the core structure and processes;
- Iterative development;
- Fluid techniques like seeding, building and “tearing down of strawmen”;
- Use of APIs for end users to customise and capture their participatory decisions;
- Free tagging processes rather than predetermined metatags.

The authoring system will remain open to participation, evolution and emergence, recognizing that Indigenous cultures and needs are not immutable, and that Indigenous expectations of what the system can do may well change over time.

Conclusion

The significance of the approach suggested by this paper is that we are concerned with the design *process*: how, by pursuing a metadesign approach integrated with Indigenous knowledge protocols, we can arrive at a system which fits better with Indigenous culture. It is innovative in that we wish to move

a step back from the design of the Indigenous multimedia knowledge system itself, and instead consider the design of authoring software which will allow Indigenous people themselves to create their own systems for storing and viewing their culture and knowledge. This is radically different from the way that existing Indigenous multimedia knowledge systems have been implemented, where the development has adopted a more traditional systems design methodology and centred on the end product: the multimedia knowledge system itself. By placing the *authoring tool* into the hands of Indigenous people, each community will be able to create an Indigenous multimedia knowledge system which truly reflects their particular culture and their community's specific needs. Moreover, this approach will permit flexibility in recording and managing their culture so that the cultural archive continues to reflect the community out of which it grew.

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