DESERT KNOWLEDGE CRC

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Recording Indigenous knowledge on electronic databases

Louis Evans

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Curtin University of Technology
CRC AUSTRALIA
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Contributing author information

Louis Evans, Director, Centre for Natural Resource Enterprise, Executive Director Centre for Sustainable Mine Lakes, Curtin University of Technology.

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For additional information please contact

Desert Knowledge CRC
Publications Officer
PO Box 3971
Alice Springs NT 0871
Australia
Telephone +61 8 8959 6000 Fax +61 8 8959 6048
www.desertknowledgecrc.com.au

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Shortened forms

APA	Australian Postgraduate Award
CD	compact disc
CSML	Centre for Sustainable Mine Lakes
DKCRC	Desert Knowledge Cooperative Research Centre
GPS	global positioning system
IP	intellectual property
IT	information technology
P4P	Plants for People
TAFE	tertiary and further education
UNE	University of New England

Executive summary

Workshop description

A half-day workshop on recording Indigenous knowledge on electronic databases was convened by the Plants for People (P4P) DKCRC project and the Centre for Sustainable Mine Lakes on 9 February 2005 at the Crowne Plaza, Alice Springs. The workshop comprised presentations on various Australian database projects either previously conducted or currently underway along with other topics of relevance to the workshop theme; it was attended by 46 people. Details of the program and presenter biographies are provided in Appendix 1 and 2 respectively.

Workshop aim

The aim of the workshop was to review methods currently being applied to record traditional knowledge on electronic databases and discuss issues relating to intellectual property protection, multi media applications, and recording methods.

Summaries of workshop presentations

Maria Cotter, Jason Wilson, Iain Davidson, Stephen Porter and Bernadette Duncan (University of New England, NSW) gave a joint presentation on the Gamilaraay Resource, a three year collaborative research project focused on the documentation of modern and historical Aboriginal knowledge of resources, resource use and resource management in the Namoi, Gwydir and Border River catchments of northern New South Wales.

Patrick Ridley (Curtin University, WA), Harry Scott (Tapatjatjaka Community Government Council, NT) and John Briscoe (Titjikala community via a recorded message) spoke about modern media and Indigenous knowledge at the Titjikala community and the process that was being adopted to record traditional knowledge about local plants through the DKCRC Plants for People (P4P) project. The objective of the P4P database project was to record Indigenous knowledge and, in so doing, preserve it for future generations. Community members make the decisions about what was put on the database and how the information is added and accessed.

John Dallwatz (Pitjantjatjara Council, SA) described the databases that had been developed by the Pitjantjatjara Council over 10 years. The stimulus for the original database had come from community members who asked if historical photographs of Pitjantjatjara people could be put onto a computer for preservation and viewing by the community. Documents, movies, text and audio have also now been incorporated into the databases (of which there were now three), and different communities were able to access the material via mobile computer units.

Michael Christie (Charles Darwin University, NT) gave an introductory description of Indigenous knowledge systems and then went on to discuss the roles that digital technology could play in preservation and use of Indigenous knowledge. Michael highlighted issues around the relative intractability of archives compared to the on-the-ground style of knowledge production. He discussed the input and use of the database by the community for cultural heritage purposes, as well its potential to be a source of evidence for different types of claims. Security of secret or sacred information if put onto the database was a concern for community members.

Graeme Sawyer (eNTITYy Pty Ltd, NT) discussed the potential of the partnership between old knowledge and new technologies, and described the various projects his company was involved with. He noted that complex integrated knowledge systems were not simplistic abstractions and this presented issues for database recording. Ownership, control (intellectual property) and security of the knowledge on the database were important issues. Various technological dilemmas were discussed in terms of making the technology user friendly. The process needed to be owned and performed by Indigenous people, with appropriate support and training.

Kado Muir (Tjupan Ngalia Tribal Aboriginal Corporation, WA) described the Ngalia Traditional Knowledge and Culture Project, the goals of which are to preserve knowledge for future generations, honour elders and ancestors and make their knowledge relevant today in a globalised world. Given the oral tradition of Aboriginal knowledge, Kado wondered about the impact of 'capturing' this knowledge on databases. Intellectual property rights were also an issue; the knowledge was the younger generation's rightful inheritance and needed to be guarded. Kado spoke about the Walkatjurra Cultural Centre.

Common themes from presentations

Projects described in the presentations were primarily established to either repatriate photographic material and other historical resources or to contribute to knowledge preservation and reclamation.

Dangers and disadvantages of recording traditional knowledge on electronic databases

Several speakers referred to the fact that the process of recording knowledge on databases may be fundamentally flawed since Aboriginal knowledge is an oral tradition and is inextricably linked to being on country. Concerns were also expressed that if knowledge is captured on a database it may not continue to grow, and that the process itself would discourage the memorising of songs, stories and ceremonies and encourage laziness.

Advantages of recording traditional knowledge on databases

It was generally agreed that documentation and description of knowledge allows knowledge to be attributed value so that it could then be used as a capital asset in enterprises and income generation. In this context the recording process is one of empowerment that allows Aboriginal people to regain control over their traditional knowledge.

Ethical issues

The need to establish protocols for the ethical conduct of research projects involving electronic recording of traditional knowledge and the development of guidelines for access, use and storage of information was mentioned by several speakers.

IP and benefit-sharing issues

Issues relating to protection of intellectual property (IP) rights over traditional knowledge, ownership of new IP that arises from the creative efforts of the project team, and arrangements for benefit sharing were discussed both in the presentations in the panel discussion.

Summary of panel discussion

At the completion of the presentations Professor Louis Evans led a panel discussion on the major themes that had emerged from the workshop presentations. Preliminary agreement was reached on the following views and issues:

- Knowledge is owned by Aboriginal people.
- Aboriginal people around the country want to preserve their knowledge and transfer it to younger generations. Databases are a tool that allow this to happen.
- Databases should reflect Aboriginal knowledge.
- Governance of databases needs to be addressed.

Workshop recommendations

The following actions were recommended:

- An email group be established to review and comment on the proceedings of the workshop.

- A similar workshop should be conducted that is largely restricted to Aboriginal people to seek Aboriginal input and perspective into the production and use of databases.
- A review should be conducted on what is happening around Australia and overseas and what is best practice with respect to recording traditional knowledge on databases.
- A steering group be established to develop a project proposal aimed at reviewing the current status, both within Australia and overseas, of traditional knowledge databases, identifying gaps in the area (conceptual, ethical and technical) and recommending best practice approaches with respect to the establishment and operation of community-based databases.

Plants for People database workshop report

Workshop description

A half-day workshop on recording Indigenous knowledge on electronic databases was convened by the Plants for People DKCRC project and the Centre for Sustainable Mine Lakes (CSML) on 9 February 2005 at the Crowne Plaza, Alice Springs. The workshop preceded the Annual Scientific Meeting of the DKCRC and was attended by 46 DKCRC researchers and other people. Presentations by invited speakers were made on various Australian database projects either previously conducted or currently under way, along with other topics of relevance to the workshop theme. Details of the workshop program and presenter biographies are provided in Appendix 1 and 2 respectively.

Workshop aim

The aim of the workshop was to review methods currently being applied to record traditional knowledge on electronic databases and discuss issues relating to intellectual property protection, multi media applications, and recording methods.

Presentations and question/answer sessions

Gamilaraay Resource Use Project

Maria Cotter, University of New England, NSW

Presentation notes

1. Joint presentation by Maria Cotter, Jason Wilson, Iain Davidson, Stephen Porter and Bernadette Duncan.

2. Described the background to the project: a three-year collaborative research project focused on the documentation of modern and historical Aboriginal knowledge of resources, resource use and resource management in the Namoi, Gwydir and Border River catchments of northern New South Wales.

3. Project designed and coordinated by members of the Gamilaraay community in partnership with researchers and the NSW Government Department of Infrastructure, Planning and Natural Resources).

4. Aims to demonstrate contribution of Aboriginal traditional knowledge to landscape management.

5. The project has a strong element of traditional knowledge reclamation.

6. Have established protocols for the ethical conduct of the research project and clear guidelines for the use and storage of informant information. Record interviews with digital technology; each informant provided with CD of interview.

7. Established protocols for information exchange (newsletters, information sheets, facts sheets etc.).

8. Results achieved to date:

    - Interviews conducted with primary and secondary informants.
    - At least 45 plant species and 30 native animal species documented.
    - Exotic plant (three) and animal (four) species also documented.

9. The question of IP is one that needs addressing. Obviously the traditional knowledge belongs to the knowledge holders but the photographic material is a creative process and there should also be some recognition of the IP rights to the materials that are created during the project.

10. The continual stream of government people and researchers coming to community organisation offices is a real problem. They are all seeking similar information. The database will help towards managing all these enquiries. The agencies could also think about being more collaborative.

Question time

This session was not recorded.

Modern Media and Indigenous Knowledge at Titjikala

Patrick Ridley, Curtin University, WA

Harry Scott, Tapatjatjaka Community Government Council, NT

Presentation notes

1. John Briscoe welcomed people to the talk with a recorded message displayed on screen. John was unable to be present in person and recorded his speech at Titjikala prior to the workshop

2. Harry Scott commented that there appears to be a number of Aboriginal elders who are examining multimedia and want to make use of it. The knowledge base is shrinking – ceremonies are not being done, languages are being lost – and the move towards recording knowledge on electronic databases is in response to this reaction. He also suggested that multimedia is likely to be increasingly used in knowledge transfer.

3. The database project is part of a wider project, Plants for People (P4P), one of the core projects within the DKCRC. The objective of the P4P database project is to record Indigenous knowledge and, in so doing, preserve it for future generations. Patrick Ridley described the approach used to collect data. This is a participatory approach where the Curtin University members of the P4P team go out on country with John Briscoe and interested community members, collect and photograph plants and make records of comments on their uses. The photographs and comments, along with information from publications on the uses of Australian plants by Aboriginal people, are then entered into the database. Currently have 53 names and information recorded.

4. The database was projected on screen and the functionality described. The server is located in Darwin. This caused some problems initially but modifications have been made and the system is working very well.

5. The database has visual, textual and audio resources. Recently Patrick and Harry have been using video files comprising images and audio.

6. Patrick located some freeware (free software available for downloading from the Internet) that is now enabling the simultaneous presentation of audio in language and in English along with written texts.

7. A problem has arisen since the format is text-based, and this is being investigated.

Question time

Q1: How is the translation carried out? Is it done by community members?

A: Yes – a number of community members can perform the translations and this is happening.

Q2: What is being done with respect to mapping the locations of the plants collected?

A: Locations are recorded with GPS but not entered on database at this stage. There are issues with respect to IP and protection of the plant resources.

Q3: Is the data entered in Darwin or in the community?

A: Some is done in Darwin, where the database was built, and some in other locations (Titjikala and Collie).

Q4: How is the database being used at present?

A: Harry related a story describing a demonstration that was performed with some of the children from the Titjikala School. The image took some time to appear and as the picture of the plant started to appear (*ili* –wild fig) the children recognised what it was as soon as the image started to scroll up and excitedly pointed in the direction where the fig tree was located near the community.

Q5: Are you recording how the plant preparations are made and being used?

A: We would like to do that but haven't got to that stage as yet. There are a lot of 'on the ground issues' that relate to the mechanics of getting the images and voice recorders. Harry then described the process whereby the database came to be called 'Tapatjatjaka Plants'. The community members make the decisions about what is put on the database and how the information is added. It was agreed that the database should reflect a central desert approach, rather than a specific language group approach.

Q6: How do you deal with the issue of value creation and anticipated benefit sharing?

A: Harry replied that personally he doesn't believe that the Tapatjatjaka Plants database will ever go to the public domain. There is recognition of the usefulness of the database as a tool to teach culture but access will be password protected. His experience is that there will be information that will not go onto a database. The information given to the researchers is only that information that the knowledge holder is allowed to convey. The approach to benefit sharing is also being addressed. Various approaches could be followed: publishing booklets using the photographic and textual materials and generating income through sales; developing flip books for the school using the database resources; producing a Knowledge Book that could be sold to people wishing to have access. The most important thing to remember is why the move to record knowledge is happening – the desire to transfer knowledge to younger generations. This is a process of preserving and protecting the knowledge for future use.

Q7: How do you deal with the IP aspects that belong to the people who actually create the photographs and text statements?

A: Harry replied that this is a very complex issue. To answer the question he then related the approach used by the Titjikala community in the benefit sharing from the tourist venture currently being developed at Titjikala. In this instance the benefit-sharing process was worked out before the project commenced. Since the tourist company and the community were partners in the process a benefit-sharing arrangement was put in place to ensure that both partners were rewarded for their efforts.

Q8: Of the 53 plant species on the database, of what proportion have information that is already in the public domain?

A: About 95% of the plants have already had information about the plants and their uses published. About 5% of the text has been added from comments made by John Briscoe and other community members involved in the project. In the latter case permission is obtained as to inclusion of the material. The material included is such that the knowledge holder has permission to reveal the information.

Ara Irititja: Indigenous Memories in a Digital Age

John Dallwatz, Pitjantjatjara Council, SA

Presentation notes

1. John Dallwatz described the database that has been developed over about 10 years by the Pitjantjatjara Council in South Australia. There are three different databases. One is open to the general public and the other two are access-restricted, gender-specific databases.

2. The stimulus for the production of the database came from community members who asked if the photographs that had been taken of Pitjantjatjara people in time past by people such as anthropologists (e.g. Norman Tindale's collection) could be put onto a computer so it was preserved and made available for community members to view. This is now a collection of material that has been put into a format that is culturally appropriate. Permission is sought for publication; if the material is sensitive the material is not put on the database. For example, if there has been a recent death the issue of sorrow might restrict publication. This is generally not a problem with people from the past, unless there is still emotional stress associated with seeing the photographic material. In other cases there may be a desire to publicise and celebrate achievements through inclusion of photographic material in database.

3. The physical objects were documents, movies, sound tapes, photographs etc., and the database reflects these sources. Each photograph has an accompanying text describing cultural uses etc.

4. The basic stimulus has been the Pitjantjatjara people wishing to bring back these historical objects and records so they belong to, and are managed by, the community.

5. In recent times people want to record their own photographs and achievements.

6. The ready access to these old records has brought a lot of joy to community members.

7. The layout of each slide is the same, to make adding more information to the record an easy process; a set of icons at the bottom of the screen assist with the ease of use of the database.

8. He has found that people pick up errors or omissions in the information and this can be altered with relative ease.

9. Each slide has a 'sensitive' link that can be used through the use of a password. In this way, people who have the right to view sensitive information can do so but the information is hidden from other people.

10. The sound icon allows people immediate access to the audio functions.

11. Have developed a 'Niri Niri', named after a scarab beetle that makes a *niri niri* noise at night. The Niri Niri is a mobile computer unit that can be placed in different communities and used to view the database. This technology has been created to make access to the database and use easy for community members.

12. John showed a multimedia presentation on a mobile computer unit that has been supplied to Mimilli and other places. Various scenes were photographed of people accessing the database using this mobile unit. He related the enthusiastic response of community members to receipt of the Niri Niris in different communities and school groups.

13. They have found that the Pitjantjatjara people always clasp and use the mouse with their right hand and do all other operations with their left hand. The reason is that someone else will pick up the mouse and take control unless they retain it in their right hand. This confers ownership to the user.

14. The way information is added to the database by community members was described and the fact that the database is owned by the community members was emphasised. The name of the person making an entry is recorded on the screen. Also includes documents of objects (e.g. photographs of original documents, letters etc.). Artwork is similarly displayed.

15. Searching can be done by different methods – subject, location etc. with an opportunity to scroll through if the spelling is in doubt. A large number of source words are used. Has more than 40 000 photographs entered in the database.

16. A second database was shown to participants. This is a private one and has restricted access. Permission was granted for it to be shown to workshop participants. This database has audio and photographs and describes the life of Pitjantjatjara people with both photographs and text. Includes life in the past as well as current lifestyles and pathways. The artwork of the new database was based on plants and other culturally important images and is very impressive.

Question time

This session was not recorded.

Aboriginal Knowledge Traditions in Digital Environments

Associate Professor Michael Christie, Charles Darwin University, NT

Presentation notes

1. Michael Christie gave an introductory description of Indigenous knowledge systems – the ways they work and how Aboriginal people theorise their knowledge. He then went on to discuss the roles that digital technology could play in preservation and use of Indigenous knowledge. Michael highlighted the concern about the dislocation of an archive and the on-the-ground style of knowledge production. He questioned whether archives could actually be used to teach young people about who they are, their relation to country, etc.

2. Michael and his team applied for and were successful in obtaining an Australian Research Council grant to look at archives of Aboriginal knowledge and knowledge practices and how they link together.

3. A three-year project, halfway through. Commenced with an audit of what is currently available in the form of archived knowledge. Produced a large list of archives. Made contact with people with an interest in the project. Two things emerged: the intractability of the archive systems and how difficult they are to work with; and how a lot of Aboriginal people are already working on the ground doing things by themselves for themselves.

4. Two major points were made: firstly, a computer needs to be understood as a boundary object that means different things to different people, and the context with which it is used determines its use; and secondly the western concept that archives ‘contain’ knowledge needs to be re-examined if databases are to be used in the transmission of Aboriginal knowledge. Databases, when primarily photographic, can display instances of knowledge production episodes that can be used by Aboriginal people. Michael stressed that we should be concerned about the processes by which Aboriginal people can use databases to record and transfer traditional knowledge.

5. Michael has found that the people he is working with are more interested in multimedia productions rather than databases as such.

6. A case study was described. A leader in one of the clans with which Michael is working was keen to reinvigorate his clan history. The Donald Thompson collection of photographs in the Melbourne Museum inspired him and he wanted to bring important examples of the collection back to his community. This needed to be done in conjunction to a trip back to the clan leader’s homeland. The

clan leader is using these photographs and other materials to reclaim knowledge that has been lost, such as certain ceremonies that he wants to make available to people.

7. People are interested in producing their own databases and in using the material in the database to produce evidence for different types of claims. Reference was made to the Pitjantjatjara presentation that was made earlier in the workshop and how certain sequences can be selected, copied and used in various contexts.

8. Another case study was described. In this instance an Aboriginal man was getting disturbed by white people coming onto his land without permission. He also felt that young people needed to know their land and their history. He approached a schoolteacher and they worked together to take young people out on country and told stories. He wanted to use a permanent record of these field trips for use in evidence in mining company negotiations and other contexts. Michael described the process whereby the information was compiled: Charles Darwin University postgraduate students going out on country with community members, taking photographs, making notes etc., and then entering them on the database.

   Michael's students worked with the community members in entering the material and editing the videos. However, when one particular community member was asked if he wanted to be involved in editing the video material he was very reluctant. His response was that the land is his database – you have to be on the land to do the knowledge. He felt torn by the way in which fine distinctions in ceremonies that are crucial for people's identity are being confused, mainly because they don't know the land.

9. DVDs are now being used instead of videos.

10. Now using Mac interface as a computational tool.

11. Another case study was described. Had a number of traditional owners in Darwin working within Charles Darwin University and one of them was very impressed with the Mac interface as a tool to teach about the Larrikea nation to family members and others. She brought in a box of photos that turned out to be crucial in a native title case due to the presence of a photograph that proved continuous association with the land.

12. Some technical matters about the Mac interface were discussed. Michael reported on a software solution that has some good features; can search without text.

13. The technology used at the local level needs to be considered as community people want to use multimedia resources as evidence in native title claims. These types of databases are therefore different in nature to those described at the workshop to date.

14. Michael finally reported that people resent the fact that everyone's information goes into the same database. The groups that Michael works with feel very strongly about this point. They want to keep what is theirs to themselves. They are also concerned with backing their data up on the web: the lack of security is very concerning. In their view, nothing that is put onto the database is secret or sacred.

Question time

Q1: Will the Mac database be available for others to use?

A: Yes, it will be on the website. However, wait a while until it is fully organised.

Q2: Please comment on the use of multimedia in levelling the playing field in power relationships within the participating community.

A: Michael replied that this was a difficult question. He related some personal experiences that illustrated how the use of databases had affected power relations and policies leading to a levelling of the playing field. The digital technology meant that people could present something without having to read or write. This was a form of empowerment.

New Media and Traditional Knowledge

Graeme Sawyer, eNTITy Pty Ltd, NT

Presentation notes

1. Graeme Sawyer commenced with a question: Old knowledge, new technologies – a happy partnership? Who's in control? This then became a theme that followed through in the presentation.

2. Graeme related a story of when he first showed an IT presentation to an elder in a school at Galiwinnku community. He found that the elder immediately recognised the potential of the technology for transferring knowledge to young people.

3. Graeme described his company operations: specialists in IT.

4. Two projects were then described: the Nadunggay project, involving the use of database technology in knowledge systems; and the Galiwinnku Indigenous Knowledge Centre Project. More recently he has been involved in numerous database-type developments including the Titjikala project, and is currently focussing on containment of cane toads in the NT.

5. The applications of database technology and issues requiring consideration were mentioned. Complex integrated knowledge systems are not simplistic abstractions and this presents issues for database recording. Databases can be used in intergenerational knowledge transfer. Knowledge exploitation is occurring: income can be derived from knowledge, but who will benefit?

6. Technology dilemmas: powerful databases; web application technology; logic and programming power to make simple interfaces; how links are created (issues relating to manual use etc.); the toolset is critical (how much power it has and how it works), and it needs to be seamless. It has recently been possible to replace the function of HyperCard with web application technology. It comes back to logic and programming power. A problem with the Plants for People project at Titjikala that has arisen is the need for icons by which Aboriginal people can see one dataset and scientists can see another rather than both types of information on display in the one field of view.

7. Design features of the web distributed data and data sources were portrayed and discussed.

8. Key issues: raw power (need lots of power if possible); flexibility (ability to input data from other sources due to a rapidly changing field); ability to interconnect and change (need to link into dictionaries etc.); metadata; ease of use (is only likely to be solved when Aboriginal people are making and driving the system themselves).

9. The Galiwinnku Indigenous Knowledge project was described. Set up for Yulnu people to capitalise on knowledge and skills possessed by people in the region and contribute to keeping traditional law and culture alive.

10. Issues: process is vital – Indigenous people must own and perform the process; support and training issues; difficulties in transporting to the bush; who is in control and getting the benefits (can be quite damaging to the project).

11. Audio repatriation component of the project: files were brought back and put into the database. The reactions from community members was dramatic. Graeme related the story of how one of the

elders has since changed a painting he made because he found the old audio tape revealed a part of the story that had been left out in recent times.

12. The restricted access rights system was explained and the forms that are used for data entry were displayed; the links system was also explained.

13. The difference between a cataloguing system as against a database system was emphasised – they are different and need to be taken into account.

14. The importance of security with regards to the functionality of the system was emphasised. Information should not be attached to cards that have poor security.

Question time

Q1: A comment rather than a question. The most critical thing in entering information on databases is to know when IP issues are important. One of issues is the extent to which the design of the database itself is subject to IP. If non-Indigenous people can patent the design, this might prevent the community whose knowledge is on the system getting access to the knowledge. There are serious issues with respect to the adequacy of protection of information, even on private data systems.

Intellectual Property Issues

Kado Muir, Tjupan Ngalia Tribal Aboriginal Corporation, WA

Presentation notes

1. Kado Muir described the Ngalia Traditional Knowledge and Culture Project. The goals of the project are to preserve knowledge for future generations, honouring their elders and ancestors and making their knowledge relevant today in a globalised world. The fact that the knowledge system is an oral system could present problems: knowledge is a living system, and if it is captured in a database it may not continue to grow. Using databases may also encourage laziness. Aboriginal elders have encyclopaedias in their heads. It is easier to have the knowledge on a database than to go through the process of remembering it all. Kado referred to an incident in which he was talking to an Aboriginal elder who was very knowledgeable about his culture. The Eeder equated Kado's education in the western university system with his education in the bush university. Kado cautioned the group that the process of recording knowledge on databases may be flawed because Aboriginal knowledge is an oral tradition.

2. Kado went on to stress that the only thing that Aboriginal people still control today is their knowledge. Even though there have been publications, control is still there. He reflected on the fact that the Titjikala database may be useful because it is taking public domain information and making it into a product over which the Aboriginal people have control. In this context the process is a way of regaining control over traditional knowledge.

3. Kado talked about the Ngalia people: who they were and are; and where they were and are presently found. He talked about some of the errors that have occurred in the past in the documentation of traditional knowledge. Listening to one of Tindale's tapes was a case in point. The method that Tindale used was traditional: carry out a literature search, get questions from the literature and go out country and ground-truth the data. Tindale asked a question and, if the answer did not match with what was in the literature, he left out that line of enquiry in his final report as it conflicted with what Tindale believed to be true.

4. Protection of knowledge: Kado urged the approach of 'use it or lose it'. He is supportive of the documentation and description of knowledge; this allows knowledge to be attributed value. Value attribution can be achieved by using traditional knowledge as a capital asset in enterprises.

5. Kado described the information that the Ngalia people currently have in written, oral and digital format. He talked about the Ngalia Songs Project, in which a number of songs have been recorded. There is one song in this collection from a woman who was very active in creating songs early last century: the Elvis Presley of the 1920s. These songs are not being recorded nowadays. He also described the Walkatjurra Cultural Centre (*walkatjurra* means drawing, painting, carving etc.) that his people have set up in Leonora.

6. Kado pointed out that all the knowledge that has been accumulated in his tribe's projects has been obtained without government funding. This is because there was a fear that the IP rights would have to be shared. He emphasised that for the younger generation this knowledge is an inheritance and needs to be guarded.

8. The rapidly changing demographic landscape in Australia was discussed. The demographics indicate that 70 per cent of Aboriginal people are under the age of 30. When you link that back to health issues, many of the older people are dying. Not only old people, but also younger people are dying. The knowledge needs to be preserved.

9. Kado made a strong point that his work belongs to the Ngalia people, not the DKCRC or Curtin University.

10. The guiding force is the Dreamtime.

Summary of common presentation themes

Reasons for establishing database

Gamilaraay Resource Use Project (Cotter et al.)

Dual aim: to demonstrate contribution of Aboriginal traditional knowledge to landscape management; and traditional knowledge reclamation.

Plants for People Project (Ridley & Scott)

Aim is to record Indigenous knowledge and, in so doing, preserving it for future generations.

Ara Irititja project (Dallwatz)

Initially established as a repatriation motive. to provide a permanent record of photographs taken of Pitjantjatjara people in time past by anthropologists and others that was owned by, and readily available to, Pitjantjatjara community members. Later in the development of the data base a demand has emerged to record current events and celebrate achievements of community members.

Yolngu project (Christie)

Reclamation of traditional knowledge as well as using the material in the database to produce evidence for different types of claims. The project aims are to examine existing archives of Aboriginal knowledge and knowledge practices, review and evaluate the validity of the use of databases to record traditional knowledge, and to seek culturally appropriate methods of recording oral traditions in an electronic format.

Galiwinnku Indigenous Knowledge project (Sawyer)

Set up for Yolngu people to: capitalise on knowledge and skills possessed by people in the region; contribute to keeping traditional law and culture alive; and repatriation of photographic material and other historical resources

Ngalia Project (Muir)

Preserve knowledge for future generations, honouring their elders and ancestors and make their knowledge relevant today in a globalised world

Dangers and disadvantages of recording traditional knowledge on electronic databases

Knowledge is a living system; if it is captured in a database it may not continue to grow.

Using databases may also encourage laziness – the memorising of songs, stories and ceremonies requires considerable effort over a long period of time. The availability of this knowledge on a database negates the necessity of performing this arduous task.

The process of recording knowledge on data bases may be fundamentally flawed since Aboriginal knowledge is an oral tradition and inextricably linked to being on country

Advantages of recording traditional knowledge on databases

Taking public domain information and making it into a product over which the Aboriginal people have control. In this context the process is a way of regaining control over traditional knowledge.

Documentation and description of knowledge allows knowledge to be attributed value. It can then be used as a capital asset in enterprises and income generation.

Ethical issues

Need to establish protocols for the ethical conduct of the research project.

Need for clear guidelines for the use and storage of informant information.

Protocols for information dissemination should also be established.

Summary of plenary session discussions

At the completion of the formal presentations the workshop convenor, Professor Louis Evans, led a round-table discussion on the major views and issues that had emerged from the workshop and sought the opinions of participants on actions that could be taken to address some of these issues.

Major views and issues

Ethics, benefit sharing and IP

- Processes for ethics approval for database projects need to be established.
- Issues of prior informed consent and broad view of benefit sharing need addressing.
- Benefit sharing needs to be negotiated up front; concept of benefit sharing is not just restricted to financial rewards.
- Need to rethink how databases are constructed. Knowledge is local. What do local people feel about material being recorded on databases?

Hardware and software options

- Best practice for hardware and software options: best practice technology and infrastructure.
- Database architecture is an issue.

Applications of databases in communities

- Sustainability of applying databases in communities.
- Need to disseminate information about databases and assess demand.
- Resources: how much does it cost to make a database?
- Role of databases in generating income for Aboriginal people; cultural heritage needs to be more valued – the Indigenous knowledge economy.

Recording of traditional knowledge on databases

- Validity and application of database technology for Aboriginal traditions.
- Databases as a mechanism for preserving and transferring knowledge.
- The outcomes of implementation of a database project should be documented so as to inform best practice. Multimedia can be used as a monitoring tool.

Applications in other contexts

- Databases have relevance in other contexts such as natural resource management applications.

Consensus view on major views and issues

At the completion of the round-table session an attempt was made to summarise the most important of these views and issues. This attempt was hampered by lack of time, but agreement was reached on a number of key views and issues. It was agreed that this list would be circulated to workshop attendees to confirm that the record of consensus as to core views and issues was correct.

Preliminary agreement was reached on the following views and issues:

- Knowledge is owned by Aboriginal people.
- Aboriginal people around the country want to preserve their knowledge and transfer it to younger generations. Databases are a tool that allow this to happen.
- Databases should reflect Aboriginal knowledge.
- Governance of databases needs to be addressed.

Recommendations

Consensus was reached on the following recommendations:

- An email group be established to review and comment on the proceedings of the workshop.
- A similar workshop should be conducted that is largely restricted to Aboriginal people to seek Aboriginal input and perspective into the production and use of databases.
- A review should be conducted on what is happening around Australia and overseas and what is best practice with respect to recording traditional knowledge on databases.
- A steering groups be established to develop a project proposal aimed at reviewing the current status, both within Australia and overseas, of traditional knowledge databases, identifying gaps in the area (conceptual, ethical and technical) and recommending best practice approaches with respect to the establishment and operation of community based databases.

Appendix 1

Recording Indigenous Knowledge on Electronic Databases: Workshop Program

Alice Springs, 9 February 2005

A half-day workshop aimed at reviewing methods currently being applied to record traditional knowledge on electronic databases and discuss issues relating to intellectual property protection, multimedia applications, and recording methods.

Workshop Program

8.00am – 8.30am	Registration
8.30am – 8.40am	Welcome and Introduction *Professor Louis Evans, Curtin University, WA*
8.40am – 9.05am	Gamilaraay Resource Use Project *Maria Cotter, UNE Armidale, NSW*
9.05am – 9.30am	Modern Media and Indigenous Knowledge at Titjikala *Patrick Ridley, Curtin University, WA* *Harry Scott, Tapatjatjaka Community Government Council, NT*
9.35am – 10.00am	Ara Irititja: Indigenous Memories in a Digital Age *John Dallwatz, Pitjantjatjara Council, SA*
10.00am – 10.30am	Morning tea
10.30am – 10.55am	Aboriginal Knowledge Traditions in Digital Environments *Associate Professor Michael Christie, Charles Darwin University, NT*
10.55am – 11.20am	New Media and Traditional Knowledge *Graeme Sawyer, eNTITy Pty Ltd, NT*
11.20am – 11.45am	Intellectual Property Issues *Kado Muir, Tjupan Ngalia Tribal Aboriginal Corporation, WA*
11.45am – 12.30pm	Discussion on interconnections, emerging issues and gaps
12.30pm	Close

Appendix 2

Presenter biographies

Welcome and introduction

Professor Louis Evans (Curtin University of Technology, WA)

Professor Evans has a Personal Chair in Aquatic Science at Curtin University of Technology and is the Executive Director, Centre for Sustainable Mine Lakes (CSML), a WA State Government Centre of Excellence. She is also the Director of the Centre for Natural Resource Enterprise, an administrative unit within Curtin University that conducts education and research programs in the area of natural resource management and enterprise and Project Leader for the Plants for People (P4P) project within the Desert Knowledge CRC (DKCRC).

Professor Evans completed her BSc (Hons) and PhD degrees at the University of Western Australia. Over the course of her research career she has conducted research projects in widely diverse areas including human endocrinology, human pathology, aquaculture technology and health management, ecotoxicology, beneficial end uses for mine lakes and, more recently, Aboriginal natural resource enterprise development. She has published in all these areas and her works include several book chapters along with over 140 research papers, articles, conference publications and reports. Over the past three years Professor Evans has been leading the P4P program, a joint initiative of the DKCRC and CSML. The P4P program, comprising three different projects, is focused on improving the wellbeing of Indigenous people through research, education and enterprise programs based on cultural knowledge of plants and their uses and the application of traditional knowledge as a capital asset in enterprise development.

Gamilaraay Resource Use Project

Maria Cotter (University of New England, NSW)

Maria has a Research Fellowship in Indigenous Resource Use in the School of Human and Environmental Studies at the University of New England, Armidale. Her primary responsibility in this Fellowship position is to conduct the day-to-day research activities involved in the Gamilaraay Resource Use Project. This is a three-year collaborative research project focused on the documentation of Gamilaraay people's knowledge of resources and resource management in the Namoi, Gwydir and Border River catchments of northern New South Wales.

The project, an initiative of the Heritage Futures Research Centre at UNE and its industry partner, the NSW Department of Land & Water Conservation (Barwon Region), is funded by the Australian Research Council under its Linkage Project Grants Scheme. Prior to this appointment Maria held a position as Research Officer in the School of Environmental Science and Management at Southern Cross University and Honorary Research Adviser with the Aboriginal and Torres Strait Islander Studies Unit at the University of Queensland working as part of a multidisciplinary team investigating the cultural heritage of the Gooreng Gooreng people of Central Queensland.

With research interests that broadly lie within the fields of Indigenous studies and natural and cultural heritage resource management, Maria has recently co-edited a book entitled *Heritage landscapes: understanding place and communities*.

Modern Media and Indigenous Knowledge at Titjikala

Patrick Ridley (Curtin University of Technology, WA) (co-presenter)

Patrick Ridley is a Research Officer in the Plants for People (P4P) project working with the Titjikala Community, located 120 km south of Alice Springs. The P4P project aims to maintain and transfer

traditional knowledge of plants in Aboriginal communities and facilitate natural resource enterprise development. The project forms part of a wider program, jointly conducted by the DKCRC and the WA Centre for Sustainable Mine Lakes, and involving Aboriginal community groups from WA, NT and SA.

Patrick is responsible for obtaining information on traditional Indigenous plant usage from the Luritja, Arrernte and Pitjantjatjara people in the Titjikala community. The information is stored on an Internet database and used to develop multimedia with both cultural and literacy values enhancing intergenerational knowledge transfer.

Patrick's research interests encompass various aspects of environmental science. He is undertaking a Masters degree at Curtin University based on the role of aquatic macrophytes in freshwater crayfish aquaculture that will incorporate Indigenous employment and training. Patrick is also lecturing in Indigenous aquaculture at a TAFE college in WA. These interests have led him to join the P4P project, and his subsequent involvement in research projects at Titjikala and at Collie, WA.

Modern Media and Indigenous Knowledge at Titjikala

Harry Scott (Titjikala Community, NT) (co-presenter)

Harry Scott has spent the last six years living and working with the small remote Indigenous community of Titjikala, south of Alice Springs, as executive officer.

Having acquired a wide range of subjects at La Trobe and Monash universities, including, zoology, mathematics, history, economics, philosophy, statistics, and computer science, mixed with an even wider range of employment, he eventually retrained as a commuter programmer and developed and taught computer IT courses.

A successful application to work for the community of Titjikala was summarised by one councillor who said, 'We picked you because you knew nothing about our culture, so we could train you the way we wanted'. Harry can confirm that his education took a steep upward curve when started work at Titjikala.

The focus over the last six years has been on community and enterprise development, and developing corporate and academic networks. There has been employment growth, enterprise growth, and increases in disposable income, through employing local people in local community services and enterprises.

Two excellent projects, the Plants for People, and the ARMtour have come to Titjikala and done much to enhance broader culture awareness, and cultural respect.

Progress at Titjikala has been evidenced by the very exciting Indigenous tourism joint venture of Gunya-Titjikala, an outback experience with Indigenous Australians for the affluent adventure tourist.

Ara Irititja: Indigenous Memories in a Digital Age

John Dallwitz (Pitjantjatjara Council, SA)

John Dallwitz is an Adelaide-based artist, photographer and heritage consultant, currently employed by the Pitjantjatjara Council as manager of its Social History Unit.

From 1986 to 1992, John was consultant to the SA Aboriginal Heritage Branch in the research and development of the Aboriginal Heritage Photographic Project. For this project he located, researched, copied and entered into a computer database more than 10 000 photographic images of significance to Aboriginal history in South Australia.

As part of that project he carried out the research, photography, design and construction of an outdoors, transportable exhibition to mark the 10-year celebration of the *Pitjantjatjara Land Rights Act*. This survived a violent electrical storm in the Itjinpiri creek bed, near Ernabella, in 1991 and toured to Adelaide, Canberra and Perth in 1992. This experience introduced him to Anangu tjuta (Pitjantjatjara and Yankunytjatjara people), and was one of the factors to inspire the digital archive project Ara Irititja ('stories from a long time ago').

Driven by a small team of enthusiasts and a great deal of Anangu support, Ara Irititja has developed over 10 years into an innovative, culturally sensitive database project, allowing Anangu access at a community level to more than 40 000 digitised historical images, documents, artworks, movies and sounds.

Aboriginal Knowledge Traditions in Digital Environments

Associate Professor Michael Christie (Charles Darwin University, NT)

Associate Professor Michael Christie has been researching and teaching Yolngu languages for 30 years. His interest in epistemology has led to an ARC research project investigating the potentials of digital technologies (including databases) to assist in the intergenerational transmission of traditional ecological knowledge (go to <http://www.cdu.edu.au/ik>). His basic research question, and the topic he will briefly address, is how can the abstracted, objectified and structured data in an official archive (within the western scientific knowledge tradition) be refigured for the ongoing, situated, creative performance of truth claims (within Aboriginal knowledge traditions)? What sorts of software solutions would be required?

New Media and Traditional Knowledge

Graeme Sawyer (eNTITy Pty Ltd, NT)

Graeme Sawyer has worked as a computer professional for over 20 years, with 15 years' experience in multimedia and online technologies. He has a diverse range of experience with different computer technology applications, machine types and software and has worked at the primary, secondary, TAFE and tertiary levels of education as well as in business.

Graeme has particular expertise in multimedia, training and project management and has been involved with elements of what is now the Internet since the 1980s. Graeme has developed extensive skills in multimedia production and the ability to integrate new technologies into development cycles and projects.

He has worked on many cultural projects in education and while working with QANTM Multimedia centre. He has recently done consultancy work for the Sharing the True Stories project with CRC Aboriginal Health, Galiwinku Knowledge Centre, the Strehlow Centre, and has been a part of the team in the Plants for People project.

He has extensive project management experience and has worked on many business projects, including business incubation. He also has e-business expertise and advanced knowledge of web applications and online technologies that comes from working on many such projects.

Intellectual Property Issues

Kado Muir (Tjupan Ngalia Tribal Aboriginal Corporation, PhD student, Curtin University of Technology)

Kado Muir is an anthropologist who has extensive experience in Aboriginal cultural heritage management and native title research, negotiations and legal proceedings. He is a traditional owner and custodian of law, knowledge and culture for the Ngalia people. Kado has worked in a number of land councils, research organisations, community organisations and is a director of Marnta Media Pty

Ltd, an Indigenous cultural communication company. Kado is currently undertaking a PhD, on traditional knowledge and economic development, through Curtin University with the support of an APA and a DKCRC scholarship. He combines his research work with the responsibilities of being chairperson of the Tjupan Ngalia Tribal Land Council (Aboriginal Corporation). Kado is keen to see his tribe, the Ngalia people, lead the way in collaborative Indigenous knowledge research and development partnerships with Universities and the private sector.

Kado Muir offers a unique perspective on communicating across cultures; his close and extended family are tribal Aboriginal people with very recent European contact experience. He is an initiated lawman and practises tribal law on a daily basis, he can speak and understand three Aboriginal languages and he has intimate personal knowledge of Aboriginal traditions, laws and customs.

DKCRC Partners

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Australian Government
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THE AUSTRALIAN NATIONAL UNIVERSITY

Centre for Remote Health
A joint centre of Flinders University and Charles Darwin University

CHARLES DARWIN UNIVERSITY

CSIRO

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Government of South Australia
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