

Report of the Sustainability Guidelines for Australian Repositories Project (SUGAR)



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<http://www.apsr.edu.au/sugar/sugar.pdf>

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Table of Contents

Background and context.....	1
What did we want to do?	1
How did we try to do it?.....	2
Content development	2
Access mechanisms	2
What did we actually do?	3
What stage is SUGAR at?	6
What did we learn?.....	8

Background and context

The Australian Partnership for Sustainable Repositories (APSR)¹ aims to develop ways of managing digital scholarly resources to ensure continuity of access. A scholarly resource is defined broadly to include traditional published formats such as journal articles and conference proceedings as well as raw data collected during the course of research. A scholarly resource may also be a collection of items in a range of formats such as images, audio, text or video.

There is considerable discussion of digital sustainability², however most occurs within communities either aware of the issues or with access to specialist knowledge³. APSR, through consultation with partners at the University of Sydney Library, has identified the need for an information service to support people creating digital collections in an academic environment. The University of Sydney Library is active in collaborations with faculty and there was an awareness of the growing need for guidelines to cover a range of technical and administrative issues with these collections.

The Sustainability Guidelines for Australian Repositories service (SUGAR)⁴ was intended to support people working in tertiary education institutions whose activities do not focus on digital preservation. The target community creates and digitises content for a range of purposes to support learning, teaching and research. While some have access to technical and administrative support many others may not be aware of what they need to know. The typical SUGAR user may have little interest in discussions surrounding metadata, interoperability or digital preservation, and may simply want to know the essential steps involved in achieving the task at hand.

A key challenge for SUGAR was to provide a suitable level and amount of information to meet the immediate focus of the user and their level of expertise while introducing and encouraging consideration of issues of digital sustainability. SUGAR was also intended to stand alone as an online service unsupported by a helpdesk.

What did we want to do?

We wanted to develop a prototype online information service capable of providing tailored information to suit the particular needs of a range of digitisation and repository projects.

A typical scenario might be similar to the following.

I have a collection of 35mm photographic slides that I want to make available online. What should I do?

This prompts an array of technical and administrative questions, including copyright, funding, skills and equipment, search and retrieval, user interactivity, workflow, and lifespan. A face-to-face discussion would canvass these areas to support development of a project strategy. As SUGAR does not include a consultancy service, we needed to provide online tools that would serve as digital surrogates for identifying, gathering and packaging information.

People differ in how they prefer to access information. Some may want to be taken through a guided path of linked topics or the equivalent of an online interview.

Others prefer to keyword search while some may seek to identify with a scenario that tells a story reflecting needs similar to their own. A key strategy was to build a store of content which could be accessed using a variety of mechanisms.

How did we try to do it?

Content development

Rowan Brownlee⁵ identified information sources by searching the open-access web, discussion lists⁶, subscription databases⁷, related bibliographic tools and catalogues⁸. We sought readily accessible authoritative documents from which we planned to extract and summarise content. This would form a store of concise and easy to understand blocks of content that could be combined, recombined and published as user-defined documents.⁹

Access mechanisms

Rowan created mock-ups of web pages demonstrating how a new user might be guided through a series of questions to arrive at a tailored report providing summarised information linked to associated reports and guidelines. Initial activity was informed by earlier work undertaken by Su Hanfling and Ross Coleman in the development of a draft project initiation checklist.¹⁰ Ross and Su drafted a series of technical and administrative questions to help guide people at the earliest stages of planning a digital project.

From a starting page users would be prompted to choose a path based on responses to questions seeking information about their materials (are they images, sound recordings, video tapes?) Depending on format they would be given a series of questions with multiple choice responses through check boxes and radio buttons.

To give an example, the following questions were developed for images.

What sort of material are you digitising?	Photographic prints Photographic slides Pages of text X-rays Maps Other
Have you worked out a digitisation workflow?	Yes No
What equipment will you be using?	Scanner Digital camera in the field Digital camera in the lab I do not know what equipment to use
Do you need equipment information?	Selecting or using a scanner Selecting or using a digital camera
How do you plan to use your images?	Internet (E.g. research, learning and teaching) Desktop printing Professional print publication Other
How do you want to search for your images?	I want to search for individual images

	I only need to manually browse through images I am not interested in searching
How long do your images need to be kept?	6 months or less Forever
Do you plan to discard the originals?	Yes No
Do you know how much storage space you will need?	I need information on estimated storage requirements

Our intent was to have a means of associating items of content with responses to particular questions. At the end of the online interview the user would be presented with a report covering all of the information needed for their particular project.

During a progress review we decided that the strategy was not feasible on an administrative or technical basis. We felt that we would not have the resources to sustain content maintenance beyond the life of the project. We also did not have the technical skills to develop a system enabling configuration of online interviews and generation of user-defined reports.

What did we actually do?

We made significant progress when Kevin Bradley¹¹ suggested developing a service modelled on PADI (Preserving Access to Digital Information)¹². Rather than extract and maintain items of content from existing reports, SUGAR would point to documents or document sections. This would greatly reduce ongoing maintenance requirements as content is reviewed, updated and maintained by other organisations. SUGAR would instead focus on developing access pathways.

Without a repository in which to store and classify content, Kevin suggested PADI as an interim staging point. We met with Marian Hanley¹³ and other National Library representatives to discuss the feasibility of cataloguing resource descriptions onto PADI for later export into SUGAR. PADI's data structures and thesaurus were compatible with our needs and PADI also supported remote submission of content.

Daniel Burn¹⁴ and Linda Barwick¹⁵ identified areas of interest for SUGAR's target community and provided a list of topics. We decided to gather content concerning images and sound while focussing on the following topics.

- Copyright and legal issues
- Funding and budgeting
- Planning and project management
- Storage and repositories
- Digitisation
- Retrieval
- Mediating access to intellectual property
- Sustainability and preservation
- Support and helpdesk

On the technical development side, a breakthrough occurred with the addition of David Berriman¹⁶ to the project team. Adrian Burton¹⁷ and Kevin Bradley

suggested either selecting or developing a framework for managing content. With considerable expertise in software development, David provided the requisite skills for technical management.

David examined a number of open source packages (including the Scout Portal Toolkit¹⁸ and various content management systems). However as we had not finalised user and interface requirements it was difficult to select a 'best fit' software solution. We decided to create a series of prototypes as html mock-ups to support further discussion and refinement of requirements and interface options.

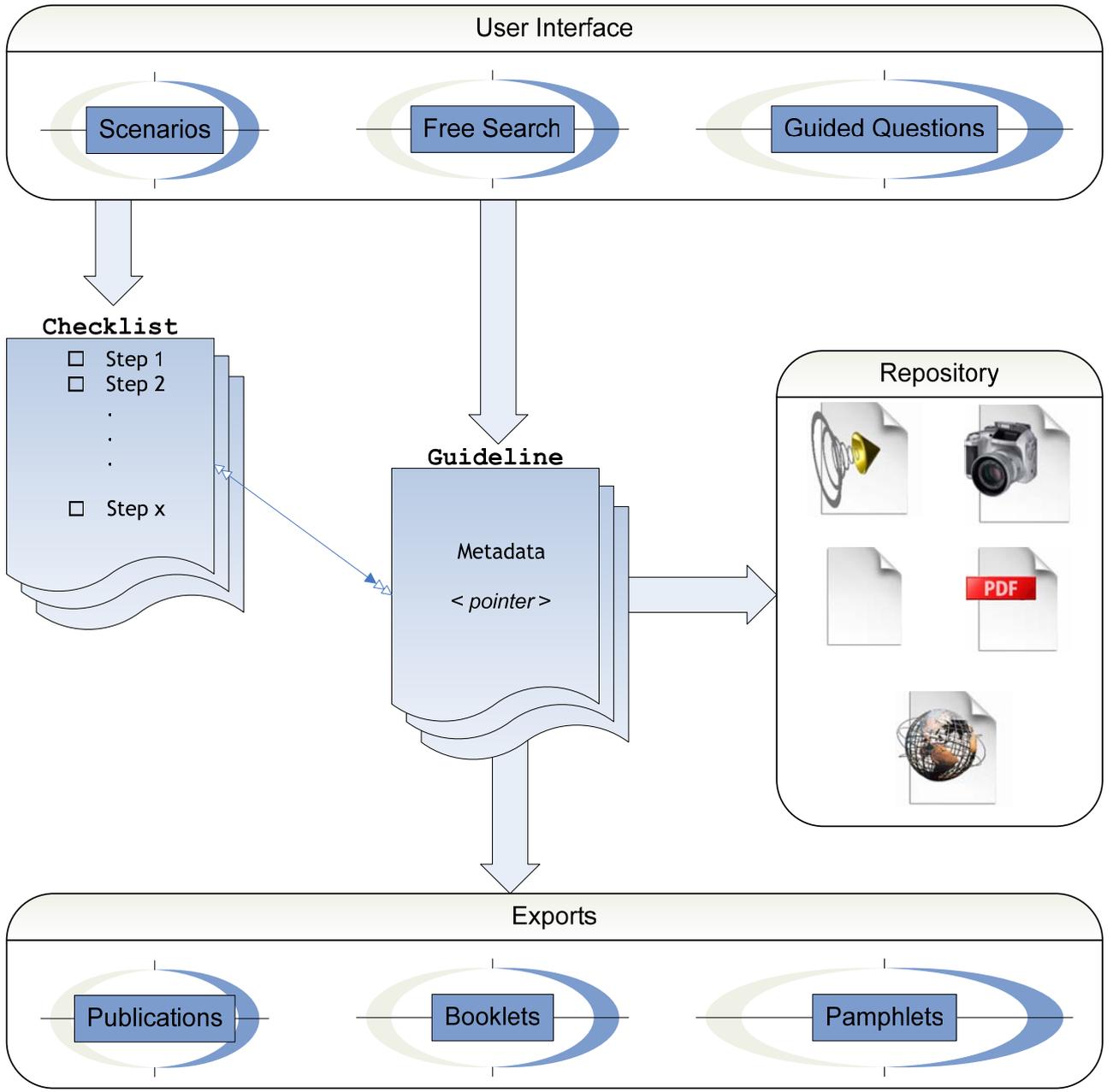
We discussed and modified the prototypes to meet what we believed could be achieved administratively and technically, arriving at a system architecture with an associated look and feel. The system needed to be flexible enough to include many pathways to discover content. We also wanted to ensure that development of pathways could be controlled by a content editor rather than requiring the technical skills of a computer programmer.¹⁹

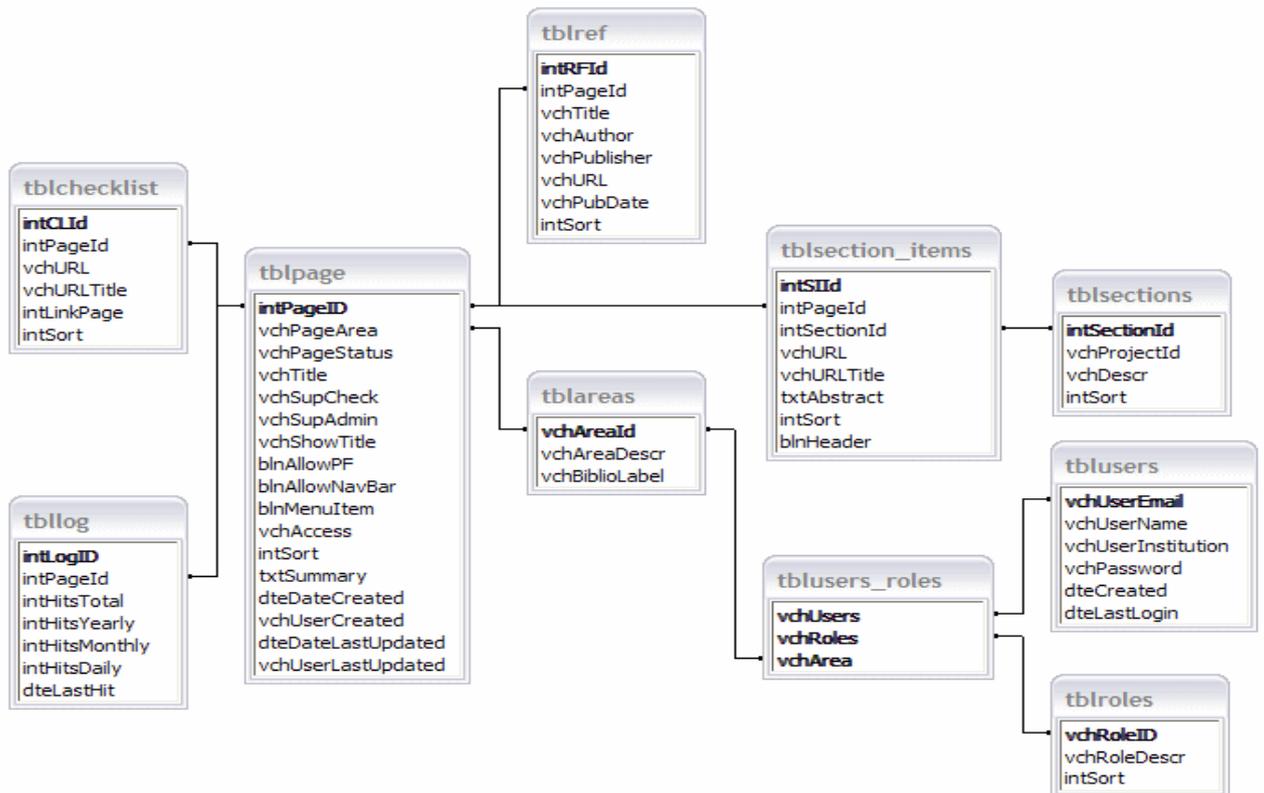
The figure on the next page describes the general system architecture and the workflow between the various entities. It was based on the idea that users would be exposed to various 'checklists' that would lead to brief guidelines and more detailed stored content (both internal and external to SUGAR). The structure for the data model is 'web' based rather than a top-down 'tree' structure in that any data item can point to any other data item, and multiple pathways can navigate to a single item of content.

David investigated various software options for implementing the architecture, but none provided an interface that met requirements, and a tight project timeframe precluded an exhaustive exploration of all possible options.²⁰ We decided to build a lightweight framework that would meet desired functionality and interface requirements.

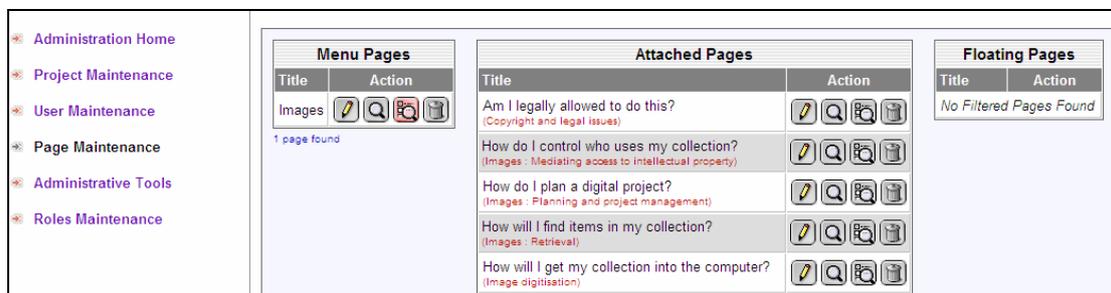
Given time constraints David's development process was necessarily iterative and responsive to evolving user requirements. We could not afford the overheads inherent in a traditional methodology (such as the waterfall development model). Instead we adopted a process closer to agile development, favouring rapid prototyping, testing and communication among the project team to refine the product.²¹

David developed the SUGAR framework in PHP utilising a MySQL database. The application has an administrative interface (requiring simple authentication) and an open end-user interface. The entity-relationship diagram that supports the applications is represented below.





The administrative interface offers various user-friendly mechanisms for editing pages, linking pages to each other and organising items of content within pages.



David also developed tools for managing users, creating new projects, checking links and viewing usage statistics.

What stage is SUGAR at?

Although development and maintenance has ceased as of 2006, SUGAR remains available online as a prototype information service.²²

The front page is intended to offer a clear and concise gateway.

APSR Home | Login | Print Friendly

APSR

- SUGAR
- Images
- Audio
- Text
- Case studies and scenarios
- About SUGAR

SUGAR

The Sustainability Guidelines for Australian Repositories (SUGAR) offer advice through links to recommended information sources. Topics include digital project planning, costs, digital conversion standards, copyright and searching.

Is SUGAR for me?

Digital sustainability is all about taking precautions to ensure that content (e.g. images, sounds, video, text) remains accessible for as long as needed.

- Do you have a collection of images or sounds that you want to use on a computer?
- Are you sure of the legal issues?
- Are you concerned about who will care for your collection in the longterm?

SUGAR can help.

I have images

What do I need to know?
 Tell me about some [key issues](#)
 Show me some [case studies](#)

I have audio

What do I need to know?
 Tell me about some [key issues](#)
 Show me some [case studies](#)

Choosing a format (such as images) displays an introductory page providing a summary of key issues and a hyperlinked checklist of issues to consider. Each issue links to a topic information page.

APSR Home | Login | Print Friendly

APSR

- SUGAR
- Images
- Audio
- Text
- Case studies and scenarios
- About SUGAR

> Images

Images

Copyright can derail a project before it has begun and all but the smallest projects need [funding](#). [Planning](#) lets you focus on what needs to be done and it also helps you measure success. You'll need somewhere to [store](#) all of those [digitised](#) items and some way of [finding](#) them again. You might also want to [control](#) who accesses your items. Digital items are surprisingly easy to lose so you may have to do some work to [preserve](#) them for the longer term.

Things to Consider

- Am I legally allowed to do this?
- What will it cost? Where can I find funding?
- How do I plan a digital project?
- Where will I put my collection?
- How will I get my collection into the computer?
- How will I find items in my collection?
- How do I control who uses my collection?
- Who will look after my collection when I'm gone?
- Who can give me some advice?

A typical SUGAR information page contains a topic overview and abstracted links to selected resources.

APSR Home | Login | Print Friendly

> Images > Am I legally allowed to do this?

Am I legally allowed to do this?

Copyright issues should be settled at the earliest stages of a project. Infringement of copyright might result in legal action. Copyright is a complex issue. There are many variables and laws differ between countries. In Australia a good starting point is the [Copyright Council](#). The Council provides a comprehensive range of introductory factsheets. For more complex matters you may need to seek professional legal advice.

Related Resources

- An Introduction To Copyright In Australia**
 This information sheet provides a comprehensive introduction to copyright. Topics include "What does copyright protect?", "What is not protected by copyright?", "How long does copyright last?", and "Who owns copyright?". There is information about activities that do and don't infringe copyright as well as explanations of moral rights and performers rights.
- Copyright Law In Australia : A Short Guide**
 This guide seeks to provide plain-English answers to frequently asked copyright questions. The content is targeted toward non-specialist readers. Questions include "What is copyright?", "What does copyright protect?", "When is copyright infringed?", and "How can copyright rights be enforced?". It also provides links to other organisations dealing with copyright in Australia such as the Australian Copyright Council and IP Australia.
- Copyright Matters : Information Sheets**
 Written for staff and students at Murdoch University (Western Australia), these information sheets cover a wide variety of topics including "Copying Text and Images from the Internet", "Making Handouts for In-Class Teaching", and "WebCT and Copyright Protected Material". There are also summaries of general copyright information targeted toward the needs of particular groups (such as library staff).
- Information Sheets : Australian Copyright Council**
 The Australian Copyright Council publishes information sheets covering many aspects of copyright law. Each publication is intended to provide a general overview. Topics include art, photography and design, education & teaching, film, video, multimedia & TV, and music and performing arts. The Council also publishes introductory information about copyright in general.
- Australia-United States Free Trade Agreement - Changes To Australian Copyright Law**

What did we learn?

Our initial aim was too ambitious. We did not have the resources to create and maintain content or to develop software to provide the equivalent of an online interview and report creation facility. We began with the idea of guiding people along pathways and decision trees, providing sets of questions related to items of content and generating tailored reports based on their responses. However we did not know if people would wish to use this type of model.. We knew too little about how people want to interact with online services.

The content remains valid and may find new application in the future. One option suggested by Chris Blackall²³ would be to incorporate the material into a decision support system centring on repository development, content creation, management workflows and publishing.

The framework developed by David also remains of considerable value. It provides a flexible and easy-to-use tool for managing and presenting information resources and is sufficiently generic to find application within a range of subject areas. The process of prototyping a system using a simple, developed framework worked well and future developments could include an investigation of open source options or integrating enhanced technology (such as AJAX) into the code base.

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- ¹ Australian Partnership for Sustainable Repositories (APSR). <http://apsr.anu.edu.au/>
- ² Kevin Bradley provides an overview of sustainability issues in his APSR Discussion Paper. http://www.apsr.edu.au/documents/APSR_Sustainability_Issues_Paper.pdf
- ³ Organisations producing guidelines include the Library of Congress (<http://www.digitalpreservation.gov/formats/>), California Digital Library (<http://www.cdlib.org/inside/diglib/>), and the National Information Standards Organization (<http://www.niso.org/framework/Framework2.html>).
- ⁴ The SUGAR prototype information service is available online at <http://apsr.anu.edu.au/apsr/w/sugar/>
- ⁵ Rowan Brownlee is Digital Project Analyst, University of Sydney Library.
- ⁶ Discussion lists included DIGLIB (<http://www.ifla.org/II/lists/diglib.htm>), IMAGELIB (<http://listserv.arizona.edu/archives/imagelib.html>), and DIGITAL-PRESERVATION (<http://www.jiscmail.ac.uk/lists/digital-preservation.html>).
- ⁷ Subscription databases available through the University of Sydney Library included Web of Knowledge, Compendex and ProQuest Computing. (<http://www.library.usyd.edu.au/databases/>)
- ⁸ Including Libraries Australia (<http://librariesaustralia.nla.gov.au/apps/kss>) and Global Books in Print (<http://www.library.usyd.edu.au/databases/>)
- ⁹ For example, the US National Archives and Records Administration provides an authoritative and comprehensive guide for digitising images to archival standards (<http://www.archives.gov/research/arc/digitizing-archival-materials.html>). Rather than simply provide a hyperlink to the document, we intended to extract and summarise sections. We wanted to provide mechanisms that would enable people to generate guidelines amalgamating concise items from the SUGAR content store.
- ¹⁰ Ross Coleman and Su Hanfling both work at the University of Sydney Library. Ross is Director, Sydney eScholarship and Su is Director, Science and Technology Libraries.
- ¹¹ Kevin Bradley is Curator, Oral History and Folklore at the National Library of Australia
- ¹² Developed by the National Library of Australia, PADI is a subject gateway to international digital preservation resources. <http://www.nla.gov.au/padi/>
- ¹³ Marian Hanley is PADI Administrator.
- ¹⁴ Daniel Burn is IT Development Manager, Faculty of Medicine, University of Sydney.
- ¹⁵ Linda Barwick is Director, PARADISEC (Pacific and Regional Archive for Digital Sources in Endangered Cultures), University of Sydney.
- ¹⁶ David Berriman is APSR Web Applications Developer
- ¹⁷ Adrian Burton is APSR Project Leader
- ¹⁸ More information on the Scout project is available at <http://scout.wisc.edu/Projects/SPT/>
- ¹⁹ Our requirement for non-technical administration of the framework precluded adoption of software such as that developed for PADI. PADI access paths are hard-wired into the code base and modification requires computer programming skills.
- ²⁰ But for time constraints we might have selected an open source CMS and worked within the development community to achieve desired modifications.
- ²¹ For an explanation of the waterfall model of software development, see http://en.wikipedia.org/wiki/Waterfall_model. For a discussion of the agile software development methodology, see http://en.wikipedia.org/wiki/Agile_programming
- ²² SUGAR is online at <http://apsr.anu.edu.au/apsr/w/sugar/>
- ²³ Chris Blackall is APSR Development Portfolio Coordinator.