LIVESTOCK LIBRARY – A DREAM COME TRUE

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ABSTRACT
The Livestock Library (http://www.livestocklibrary.com.au/) was the dream of the Australian Sheep Industry Cooperative Research Centre and the Cooperative Research Centre for Beef Genetic Technologies. Their dream was to develop a free to use website that provided access to information of value to all participants in Australia’s livestock industries – producers, students, extension officers, researchers and teachers.

This paper will describe how the Livestock Library developed from being a dream to a reality – a virtual library that provides a single entry point to high quality research and extension information. It is a study of how information seekers with no library resources decided what information they valued and how they would like to access it; then went about developing a service to fulfil these criteria. The challenges faced by a librarian who joined the project when it was at an advanced stage are described, along with the ways in which these challenges were resolved.

Although there were plenty of nightmares along the way – issues relating to funding, software, copyright, and seeking a methodology to enable industry-wide searching, the dream has been realised. The Livestock Library is a “low maintenance” service that provides free access to the full text of three major Australian livestock industry conferences, access to articles published in five leading agricultural journals, some dating back to the 1950s, and facilitates access to information on selected high quality industry sites.

INTRODUCTION
This is the story of a successful information service that has been developed from scratch with a relatively low budget. Its success is due to the enthusiasm and enterprise of information seekers. It is the story of a national information project initiated by agricultural scientists and veterinarians who have a ‘can do’ attitude and a keen sense of wanting to make valuable information accessible to everyone in their industry.

BACKGROUND
In the early 2000s researchers affiliated with the Australian Sheep Industry CRC (Sheep CRC) were frustrated by the difficulty they were having accessing Australian livestock research information. Results of Australian research into sheep and wool production (for example, sheep nutrition, lambing rates and wool quality) were difficult to obtain
without lengthy searching of print collections. CRC researchers were well aware that groundbreaking sheep industry research was often presented at the major Australian livestock conferences but this information was generally not available online. Also, Australia made a substantial investment in agricultural research in the 1950s, 1960s and 1970s and very little of the resulting information was in electronic format. In a world where researchers and students increasingly believe that if something is not available on the Internet it does not exist, access to historic Australian livestock research was relatively difficult. This lack of easy access was potentially costly—there was a risk of research being repeated.

In 2003 the Sheep CRC decided to establish a Sheep e-Library. The concept was to develop a free online service for the benefit of all participants in Australia’s sheep industry. It would contain both research and producer information and be accessible by users regardless of their location. This Sheep e-Library was originally included in the International Livestock Resource and Information Centre (ILRIC) (http://www.ilric.com/en-au/) Knowledge Warehouse Project, funded partly through the Commonwealth's Major National Research Facility program. In late 2004 the e-Library was withdrawn from ILRIC.

The Sheep CRC persevered with the project and sought funding from elsewhere. In August 2005 Australian Wool Innovation agreed to fund the project for three years, and a similar arrangement was reached with the CRC for Beef Genetic Technologies (Beef CRC). At this time the scope of the e-Library broadened to include information of value to all participants in Australia’s livestock industries and its title changed to Livestock Library.

While funding issues were being resolved, a prototype of the e-Library was developed; it was released for industry evaluation in January 2005. This prototype operated successfully on a central database of links and was developed using open source software customised by software developers in Toowoomba, Queensland.

CONTENT

A library is nothing without content. When the e-Library concept was developed by the Sheep CRC they had a clear idea of the information that was of value to their peers – conference papers presented at the major livestock conferences (Association for the Advancement of Animal Breeding and Genetics, Australian Society of Animal Production, and Recent Advances in Animal Nutrition in Australia) and articles published in the leading agricultural journals, Australian Journal of Agricultural Research (AJAR) and Australian Journal of Experimental Agriculture (AJEA).

As the conferences and early issues of the journals were not available in electronic format, they engaged volunteers and students to scan these publications back to the first issue and to create PDFs of each document. The scanned documents were later donated to the original publishers for them to host on their own servers.

Metadata was developed by running a program over the scanned documents to populate the e-Library database automatically, with no ‘human intervention’. Every item included
on the Livestock Library was available in full text, and could be accessed in a single sitting.

**LIVESTOCK LIBRARY LAUNCHED TO THE PUBLIC**

In September 2005 the Livestock Library was launched to the public at the Association for the Advancement of Animal Breeding and Genetics Conference. Up to this time there had been very little involvement by library professionals—advice had been sought on particular issues, but no library professionals had responsibility for the Livestock Library; it had been developed by agricultural scientists, veterinarians and the information technology contractor. At the time of the launch it was a database of links to about 15,000 documents, freely available on the internet, regardless of location.

In July 2005 an affiliate of both the Sheep CRC and Beef CRC—the Department of Agriculture and Food, Western Australian (DAFWA)—had been approached to manage the Livestock Library. Due to the unusual nature of the project it took some time to reach agreement about the staff required. In January 2006 DAFWA appointed a librarian to a part-time position as manager of the Livestock Library. The manager was to report to a committee of representatives of the funding bodies.

It was an interesting scenario for a librarian to be presented with—a free online service that needed substantial maintenance and that was already publicly available and being widely promoted by the owning organisations. Many issues needed to be addressed:

- copyright
- software
- new issues of journals to be added
- criteria for inclusion of new information
- decisions about data quality, authority files, etc
- current records to be enhanced
- procedures put in place for ongoing collection management
- promotion of the Livestock Library

At the time the manager was appointed the biggest issues were copyright and software. The scans of the CSIRO journals (AJAR and AJEA) had previously been donated to CSIRO Publishing. However, the conference papers were still on the Livestock Library’s server in Toowoomba. Software was also an issue. Although it had been purpose-built for the project, it had limited capability for editing records and adding new material.

Following a meeting with the software developers, the manager recommended to the Livestock Library Management Committee that the library database should be migrated to software that would be more flexible and user-friendly. Inmagic® DB/TextWorks® and WebPublisher PRO® were selected as they were ideally suited to the requirements of the Livestock Library—user-friendly database software and an effective web interface that also supported online submission of material.
It was agreed that at the same time as migrating the data to the new software, the scans that had been held on the Livestock Library server should be donated to the relevant publishers, and accessed on their servers, thus resolving the copyright issue. The publishers all agreed with this move, and agreed to provide Livestock Library users with ongoing access to the documents.

With the migration to new software which supported editing of records, serious work could commence on filling gaps in series and improving the metadata, which was often incomplete and included some surplus coding that had been picked up when the metadata was created automatically. A part-time librarian was employed for 12 months to enhance the metadata—keywording some records, removing inappropriate capitalisations, cleaning up pagination and checking other errors that had originated with the automatic metadata creation.

**DEVELOPING A MATURE PRODUCT**

Following the migration to Inmagic® software, the donation of the remaining scans to publishers and data clean-up, the Livestock Library became a reliable, stable service, operating as a distributed system, with participating publishers able to upload their own documents, regardless of their location. All information indexed in the Livestock Library is held on the publishers’ servers, enabling publishers to control access and impose fees if they desire.

The range of publications included in the Livestock Library database has increased and includes complete sets of:

- Association for the Advancement of Animal Breeding and Genetics, *Proceedings*
- Australian Society of Animal Production, *Proceedings*
- *Recent Advances in Animal Nutrition in Australia*
- *Australian Journal of Agricultural Research*
- *Australian Journal of Experimental Agriculture*
- *Journal of Reproduction, Fertility and Development*
- *Rangeland Journal*
- *Wool Technology and Sheep Breeding/International Journal of Sheep and Wool Science*
- Publications by the CRC for Beef Genetic technologies
- Standing Committee on Agriculture and Resource Management (SCARM) and Primary Industries Standing Committee (PISC) *Reports*

**PRODUCER INFORMATION**

At the start of 2007 the Livestock Library was progressing well, but was very much a database of links to research information. Two major issues needed to be addressed:
1. The requirement of the project to provide information for ALL participants in Australia’s livestock industries, including producers and students, who didn’t necessarily require research information

2. The short-term nature of the project. Funding was assured only until 30 June 2008. It was intended that the Livestock Library should be a viable ongoing service by that time.

By addressing the first issue—provision of information tailored for producers—it was expected that the Livestock Library would become more valued by the agricultural community and that the viability of the service would be assured.

Information tailored for producers was already available on a range of sites, for example, state departments of agriculture and primary industries, non-government publishers and rural research and development corporations. Creating and maintaining links to this information on the Livestock Library would be labour intensive; a technical solution was required.

Initially it was thought that a ‘spider’ or ‘crawler’ should be employed to index web pages on selected sites for the Livestock Library, enabling Livestock Library users to search data retrieved by the crawler and access information on target sites. Preliminary discussions revealed that managers of some of the proposed target sites were reluctant to allow additional crawlers into their servers. The Livestock Library manager received feedback that web masters were accepting of crawlers sent by known search engines, but there was a risk that they might block an unfamiliar crawler.

Looking at the issue objectively, the Livestock Library wanted to enable users to search selected sites concurrently and to retrieve relevant material. As a librarian, the Livestock Library manager considered that technology widely employed by libraries—federated searching—would be an ideal solution. A federated search is ‘a search for information using software designed to query multiple networked information resources via a single interface’. (Reitz 2008)

Federated searching was readily accepted by the managers of target sites because, unlike crawlers, it searched sites using their native search interface, benefiting from the ways web masters intended the site to be searched and retrieving only information on the site at the time of the search. Items retrieved would be available in full text and the risk of negative impact on the target sites would be minimised.

The Livestock Library required a federated search with a difference—it needed to search other websites, not library catalogues or commercial databases. After considering a range of available products, WebFeat® was selected. There was no requirement for target sites to be Z39.50 compliant, the pricing structure was simple with no hidden costs.

Implementation of the federated search involved a lot of decision making. We had many questions to resolve. However, with the expert assistance of a programmer from the DAFWA web team, these issues were resolved one by one.

1. How to include the federated search seamlessly in Livestock Library? WebFeat provided script for a ‘quick search’ that was added to the home page of the
Livestock Library. To the user, the search looks unchanged. However, it searches all the target sites.

2. How to avoid the advanced search that was the default on the WebFeat template? Use of the ‘quick search’ steers users away from the advanced search template. As some of the target sites for the Livestock Library only contain a few hundred documents, the advanced search is too complex and could be counterproductive. Generally the quick search is adequate.

3. How to display results from disparate websites? The same results information was displayed in the WebFeat template as on the target site. The template was ‘stretched’ to accommodate some sites that displayed very long links and descriptions.

4. How to make the original Livestock Library available to users who only want research information? As the federated search is relatively slow, some researchers who do not require the producer information prefer to use the original Livestock Library. This has now been renamed ‘Livestock Library Research Database’ and users may go straight to that and avoid the federated search.

In November 2007 the Livestock Library federated search was launched. Departments of agriculture and primary industries from every state were targeted by the federated search at the time of the launch. All the funding bodies were added shortly afterwards and other relevant sites are gradually being included.

Implementing and managing a federated search is a character-building experience. Many variables are introduced to your site which can be affected by changes by any of the participants. In the past six months we have experienced problems due to:

- target sites changing the URLs of search pages
- PDFs on target sites not opening
- the federated search becoming unavailable due to problems at WebFeat
- delays with new translators being created.

Despite these issues, the federated search has made a vast improvement to the Livestock Library. The library’s usage has increased dramatically this year. The silver lining to some of the problems is that calls and emails from users anxiously waiting for the service to resume provide further evidence of its popularity.

MARKETING AND PROMOTION

As the target audience of the Livestock Library is ‘all participants in Australia’s livestock industries’, promotion efforts have been far-reaching. It is a free service, with no requirement for logins and passwords. It is a particularly beneficial service for people who do not have access to a university or institutional library. Equity of access is an important aspect of the Livestock Library – beef producers in Charters Towers (Qld) or wool growers in Kojonup (WA) have access just as readily as agricultural consultants in Tamworth (NSW) and university students in Hobart (Tas).
A range of promotional materials—banners, posters and DL fliers—have been developed and used widely in marketing the service. As well, emails have been sent to university and TAFE lecturers, and to officers of state departments of agriculture and primary industries.

The service has been demonstrated at industry field days throughout Australia. With the assistance of the Beef and Sheep CRCs it has been demonstrated at events ranging from Beef 2006 in Rockhampton to field days at Beltana in the Flinders Ranges and Bridgetown in WA.

The Livestock Library has also been demonstrated at the conferences of the information providers—Australian Society of Animal Production, Recent Advances in Animal Nutrition in Australia and Association for the Advancement of Animal Breeding and Genetics. Flyers have been included in satchels of other conferences— NSW Country Public Libraries Association and WA Farmers’ Federation, for example.

There are links to the Livestock Library on numerous other sites. Inclusion of the Livestock Library on database ‘pick lists’ of major libraries is encouraged.

Media releases have also been a useful promotional tool—one article in the NSW newspaper, The Land, trebled the number of searches for a couple of days!

During the year from October 2006 to September 2007 approximately 9000 visitors conducted over 18,000 searches of the Livestock Library. In the period February–May 2008 approximately 3000 visitors made over 9800 searches. Thus the average number of searches per visitor this year has increased from two to three. Since February 2008 visitors have come from 92 countries. The top 10 countries are listed below.

Tab.1: Visitors to the Livestock Library by country, February-June 2008

<table>
<thead>
<tr>
<th>Country</th>
<th>Percentage of visitors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>77.30%</td>
</tr>
<tr>
<td>United States</td>
<td>6.80%</td>
</tr>
<tr>
<td>New Zealand</td>
<td>1.94%</td>
</tr>
<tr>
<td>Brazil</td>
<td>1.01%</td>
</tr>
<tr>
<td>Canada</td>
<td>0.81%</td>
</tr>
<tr>
<td>South Africa</td>
<td>0.74%</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>0.71%</td>
</tr>
<tr>
<td>Ireland</td>
<td>0.69%</td>
</tr>
<tr>
<td>Mexico</td>
<td>0.53%</td>
</tr>
<tr>
<td>Argentina</td>
<td>0.51%</td>
</tr>
</tbody>
</table>
A trademark application for the Livestock Library has been accepted, the trademark should come into effect late in 2008.

**SUCCESSION PLANNING**

Funding of the Livestock Library has always been on a short-term project basis. The need to develop the Livestock Library into a viable and valued service, and plan for its future after 30 June 2008, has always been a consideration for the Livestock Library Management Committee and manager.

Those of you who are familiar with agricultural information will be aware that there has been an ‘elephant in the room’ throughout the Livestock Library project—Australian Agriculture and Natural Resources Online (AANRO).

AANRO (http://www.aanro.net/) is the Livestock Library’s principal competitor, but currently does not provide the same breadth of livestock information or functionality as the Livestock Library. It is a large established online information service developed for the Australian agriculture and natural resource sectors. It is being jointly funded by approximately 30 participating research organisations through the Primary Industries Standing Committee (PISC), the Natural Resource Management Standing Committee (NRMSC) and the Rural Research and Development Corporations (RDCs).

AANRO is currently being redeveloped from a bibliographic database running on an Inmagic® platform into a full text subject digital repository of research material in the agriculture and natural resource management area.

The strengths of AANRO are considered to be:

- currently funded by PISC, NRMSC and RDCs
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australian library and information association biennial conference

2 – 5 september 2008 alice springs convention centre, alice springs, nt australia

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r. m. mcintyre

- a comprehensive source of australian agricultural and natural resources information—about 200,000 items are indexed in aanro
- quality of content—contributed by research and development corporations, csiro and state departments of agriculture and primary industries
- information management—indexing and metadata enabling accurate search results.

the weaknesses of aanro are considered to be:

- livestock information is not comprehensively represented
- aanro is low profile as a result of a lack of marketing
- much of the information accessed via aanro is not available in full text; only a reference is supplied, leading to some frustration for users
- links are often provided to the site on which a document is hosted, not to the specific item
- aanro does not have federated search functionality
- aanro is currently in a transition phase, awaiting redevelopment by a new service provider.

the low profile of aanro and its weakness in covering livestock information were important factors in the establishment of the livestock library. the researchers associated with the sheep crc who initiated the livestock library had little or no awareness of aanro. a dialogue has now opened between the livestock library and aanro and the two services refer users to each other.

the livestock library is now a sufficiently mature service to be able to negotiate with aanro and other interested organisations from a position of strength.

by the beginning of this year it was agreed that new funding arrangements for the livestock library could include either a consortium of a wider number of stakeholders or an amalgamation or alignment with aanro. alternatively, the livestock library could be shut down.

at the time of writing the future of the livestock library is uncertain. however, its current owners are actively seeking new funding arrangements to ensure its ongoing success and efficient provision of livestock information to participants in australia’s livestock industries.

conclusion

the great strides made in the provision of information to participants in livestock industries have set a high standard. the livestock library has been a successful information project initiated by people outside the information professions.

in some respects they ‘rushed in where librarians fear to tread’, ignoring factors information professionals would have considered, including copyright law, the presence of an established rival, and the availability of library database software. these issues
have now all been addressed and, with their resolution, the Livestock Library is a stronger, more viable service.

As the librarian in the role of Livestock Library Manager I would describe many of the recommendations and decisions that have been made as ‘pragmatic’—sitting the practicalities, timing and funding constraints of the project.

As a research project the Livestock Library has demonstrated that online access can be provided to research information developed over the past 50 years, and that it is possible to provide users with a single search interface to access both research information and information intended for producers.

The Livestock Library has also raised the information expectations of participants in the industry. I trust these expectations will be met in the future.

REFERENCE

BRIEF BIOGRAPHY OF PRESENTER
Agricultural information and innovative information delivery methods have been interests of Ruth McIntyre throughout her career.

Ruth has specialised in project librarianship and has worked in a range of agricultural information organisations – CSIRO, a farm lobby group, an independent agricultural publisher and a state department of agriculture, as well as for TAFEWA and Fremantle Hospital. This wide variety of experience formed an ideal background to bring to the challenging position of Manager of the Livestock Library as this position required information management skills, a good knowledge of agricultural information, marketing skills and a preparedness to be innovative.