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## **GETTING INVOLVED: the contribution of an Australian government special library to rural economic development.**

### **BACKGROUND**

To illustrate the context of this presentation, it may be helpful provide some brief background information on Australia and on the State of Queensland which is serviced by the Department of Primary Industries (DPI).

#### **Australia**

Australia is the world's sixth largest country. It is slightly smaller than the United States and is both the world's largest island and its smallest continent. Australia is fairly remote from most of its global trading partners with the exception of Asia, New Zealand and Indonesia. The federal government is based in the capital city of Canberra, and there are six states and two territories each with their own parliament and capital city. Most State capital cities are located on the Southern and Eastern seaboard.

The Australian population of 18.5 million is highly urbanised with only 13-14% classified as rural. There is a strong migration of rural youth to the city areas leaving an increasingly aging population in the rural areas.

Geographically, Australia is a large country covering 7.7 million square kilometres, located between 10° and 44° south of the equator. The climate varies considerably from tropical to warm temperate with vast areas of desert. Covering such a vast area, Australia is a country of considerable climatic, economic and agricultural diversity.

#### **Queensland**

Covering 1.8 million square kilometres, Queensland is the second largest of the six Australian states. The climate varies from sub-tropical to tropical. Summers are long and hot ranging from about 25°C on the coast to 50°C inland and winters are short with temperatures from -4°C at night to 35°C daytime depending on how far North and West the location. It is very rare that some part of the state is not in a drought situation.

Almost twenty per cent of Queensland's population is classified as rural. The majority of the Department's primary producer clients live well outside the urban boundaries, often hundreds of kilometres from the nearest town. Isolation and lack of everyday facilities such as an efficient telecommunications network is normal.

Queensland's three major industries beef, sugar and horticulture account for about 60% of total agricultural

output in value.

## **Queensland Department of Primary Industries**

The Department of Primary Industries has approximately 4000 staff distributed throughout Queensland providing specialised research, extension, business and marketing services in the primary industries sectors, including fisheries and forestry. The Department describes itself as a "rural economic development agency" and recognises that providing information to clients is its core business. DPI is a well-managed organisation which encourages and supports innovation.

Scientific research in food technology, climate, animal and plant health and biotechnology is a high Departmental priority. Research scientists generally understand and value access to timely, relevant information and library services. Within this generally conducive environment DPI Library Services has successfully implemented a range of initiatives which have contributed to the economic development of rural Queensland.

### **DPI Library Services**

DPI Library Services is a centralised operation with six locations. Four libraries including the Central library are located in the Brisbane metropolitan area and the two other libraries are located in Toowoomba in Southern Queensland and in Mareeba in North Queensland.

The library service has 22 staff who manage subscriptions to over 1000 serials titles and a collection in excess of 100,000 monographs. The library has access to a reasonable range of relevant electronic information services which are networked to the desktop's of DPI officers via the Web or a CD ROM network. The library annual budget is approximately \$1.5m. By Queensland special library standards, it is quite a large operation.

## **INTRODUCTION**

The information and knowledge management revolution is rapidly increasing in velocity. Organisations worldwide are beginning to realise that having effective access to relevant external information sources, and also to the information and knowledge created by the organisation itself, can contribute significantly to their competitive edge.

So at long last the skills which librarians possess in knowledge and information management, technology and retrieval are becoming indispensable to their parent organisations. Sadly, many organisations are unaware of the skills and abilities their library professionals possess and many librarians are not doing enough to change this situation.

The traditional excellent personalised service is no longer enough. The achievements of the library need to be seen to contribute significantly to organisational core business. This means that library achievements must also be effectively and continuously marketed to senior management if appropriate recognition and funding is to be realised.

## **SKILLS AND ABILITIES OF LIBRARIANS**

Now that information and knowledge management have become fashionable, librarians have a unprecedented window of opportunity to demonstrate their value to their organisation. They can finally break the dusty, tweed skirt or jacketed, quiet and studious, back-room image which has haunted the profession for hundreds of years.

Librarians know a lot about what really matters. They know the value of accurate and relevant information to an organisation and its clients. They understand information technology and telecommunications applications for information storage, organisation, retrieval and delivery. They understand and practice excellent client service. They value disciplined information management. They have developed extensive support networks and world-scale cooperative ventures. Their professional techniques are largely unrestricted by discipline, commercial, geographical or political boundaries. This is an incredibly powerful set of skills and abilities. In most cases organisational senior managers have no understanding of the power underlying this wealth of knowledge and skills.

Because librarians have an intense interest in the information needs of individual clients they are usually more aware than most other Departmental employees of the overall scope of organisational activities. They are also aware of the information gaps and deficiencies within the organisation. As skilled information gatherers and distributors, they understand and respect the principles of intellectual property. This set of skills can be applied most effectively in any number of areas within an organisation. The key to success is in identifying where the library can make the most impact on organisational core business and in marketing achievements effectively.

## **DPI LIBRARY SERVICES INITIATIVES**

In 1995/6 most Australian farmers did not use the Internet. This was due to their lack of knowledge of potential applications, unfamiliarity with computers, high telecommunications costs and an unreliable telecommunications infrastructure. There was consequently little understanding of the potential benefits and applications of the technology. Understanding that this situation would change, between 1996 and 1999 DPI library staff implemented a range of initiatives which included three key elements:

1. the delivery of Internet training programs in rural and remote communities,
2. the initiation of a Departmental Web Services project to establish a systematic framework to provide information to clients,
3. the establishment of a series of conferences focussing on information products and services relevant to Departmental clients.

### **1. Internet training programs**

Although only 1-2% of Australian farmers used the Internet in 1995, DPI Library staff realised that it had the capacity to significantly reduce rural isolation, improve communication and provide access to DPI's

information, and many other useful information sources. Knowing that timely, relevant, accurate information is also critical to business and economic development, library staff commenced two programs to raise awareness of the features and uses of the Internet within Queensland rural communities. These included the "Internet to the West" program and the wider "Community Internet Awareness" program.

### **"Internet to the West" project**

In late 1995, after learning of an extension program conducted at the University of Illinois, Urbana Champaign, the DPI Systems librarian together with the DPI Rural Information Specialist for the Western region, implemented an "Internet to the West" pilot project. This program was conducted in Longreach, a small town situated in the geographic centre of the state. The aim of the project was to help rural communities gain a better understanding of the Internet and its tremendous potential for information dissemination, communication, networking and business development. An important further goal was to train course participants to a level of competency whereby they would be able to train others within their local community.

With Internet access as a pre-requisite, twenty graziers and community educators participated in "specialist" internet classes, one day a month over three months. Training covered history, functions and use of the Internet, including email, electronic discussion features, file transfer protocol, the world wide web and web authoring. The training was conducted using a mobile training room consisting of a set of twelve laptop computers and various accessories configured for Internet access from remote sites.

Several of the participants in this program were members of the Queensland Rural Womens Network. These women have subsequently gained several million dollars in funding from the Australian "Networking the Nation" project and are now conducting extensive training programs throughout Queensland.

Another outcome from this project was the purchase of two additional "mobile training rooms" which are now transported all over the state and used by DPI extension officers to offer training to local communities. In some cases a training room is taken on to individual properties. Although the connection speeds are sometimes as low as 9,500 bps, the Digital Radio Converter Service (DRCS) telecommunications links have been successfully used to demonstrate the use of the Internet. Download speeds can be so slow that one can literally "hang out the washing and water the garden" before receiving the information.

### **b) Community Internet Awareness program**

In addition to the "Train the trainer" course, a series of free "Community Internet Awareness" sessions were run by DPI library staff in the larger towns of relatively remote areas of the state such as Longreach, St George, Applethorpe, Gympie, Biloela, Emerald, Rockhampton, Roma, Bowen and Charleville.

In Applethorpe about 200 kilometers from Brisbane, the program was run to celebrate International Womens Day. Following local advertising, the original program filled within two hours and had to be expanded to three days, including Saturday and evenings to meet the demand. Over 200 people attended, in some cases whole families, some travelling over 100k. Up to 24 people shared twelve computers connected to the DPI network. They listened firstly to a half-hour presentation on the Internet and then spent half an hour "hands on" exploring the World Wide Web. The Community Internet Awareness program was most successful. In total approximately 2000 people from rural communities attended these sessions over a period of two years.

To maximise the value of the exercise, the community sessions were always run in conjunction with courses

provided to DPI officers on how to access the library's electronic information resources via the DPI wide area network.

As far as we are aware, DPI was the first library service to provide Internet courses to the general community in Australia, and the first to offer these courses in Queensland's more remote areas. Courses are now provided by the DPI Library and Web Services units and by DPI extension officers. A range of other Internet training courses are also available. These include Technical and Further Education (TAFE) Colleges, the Queensland State Library, the Rural Extension Centre (a joint DPI and University of Queensland training facility) and courses provided by a range of independent industry consultants. Courses are also provided by other Queensland State Government Departments such as the Office of Rural Communities and the Department of State Development.

Each of these agencies is offering a different curriculum and fee structure. Several of the Queensland players met recently to investigate the feasibility of working together to standardise the course content and to increase the accessibility of courses available within rural areas. Opportunities for government joint venture funding are also being investigated. Similar moves to co-operate are happening at the national level.

## **2. Web Services Project**

It was obvious that when rural communities started to understand the potential of the Internet, they would want immediate access to relevant full text information. In 1995, DPI had a lead time of approximately two years in which to prepare for the anticipated demand.

To cater for this expected demand, DPI Library Services played a key role in initiating and implementing the DPI Web Services project. In conjunction with staff from the Information Systems division, a proposal was formulated which successfully gained over A\$3m in funding over three years. This project has four main components:

- \* Web content development,
- \* Information infrastructure development
- \* Technical infrastructure development.
- \* Marketing, training and education

DPI staff who had been involved in training clients in remote areas were well aware of the frustrations of trying to access the Internet from remote areas using low telecommunications bandwidth. As remote clients primarily need quick and convenient access to relevant, up to date, accurate information, the DPI web site limits its use of time and bandwidth-hungry colour graphics, music, video, bells and whistles in favour of simple but effective designs.

Activities of the Web Services unit includes a Web "publishing house" to prepare internal information for external consumption. The site is continuously revised and developed, and training programs are provided for DPI officers and client groups. The unit is also responsible for maintaining quality standards.

Since the Web Services project commenced, the Department has realised that a quantum change in information creation, storage, organisation and delivery mechanisms has occurred at the global level. As a result, in July 1999 the Web Services unit will no longer be a project, but will become a permanent section of the Department. It is part of the Client Information Services Division together with Library Services, DPI

Publications, Public Affairs, Rural Information Specialists and the DPI Call Centre. Library Services staff now deliver training courses in conjunction with the Web Services unit, but with access to much better equipment and information thanks to the Web Services project funding.

It is going to take a few years until all new DPI information is permanently stored in electronic format but the professional, scientific research, technical and extension staff who create the content can now see the advantages and applications of web publishing, and are becoming more attuned to publishing material in electronic format. As a result DPI information will become increasingly more accessible to remote clients.

By the end of 1999 it is estimated that at least 40% of Australian farmers will have access to the Internet, a 39% increase over four years. Receiving over 50,000 visits per month, the DPI web site is currently one of the most frequently accessed sites by rural Queenslanders and the sixth most frequently accessed by Australian farmers. It has received a four star rating in the "*Farmer's Guide to the Internet*" for providing an integrated Internet strategy with its information content, farmer training program, bulletin boards and discussion groups. So the DPI Web Services initiative is now highly effective in directly supporting the DPI priority theme of accessible, timely and innovative information delivery .

In 1992, before the "Internet Revolution", DPI commenced a program of opening Information centres in regional areas as part of an official extension strategy. By 1997 there were approximately 50 of these centres, with plans for more. Only one or two of these Information Centres had a dedicated staff member to look after the largely print-based collection, and none of these staff were qualified librarians. With no dedicated staff and minimal funding, it was impossible to keep control of the recording, accuracy and relevance, storage and filing of those materials. In most cases, there no listing of the contents of the collection. To reduce costs, many of the centres were located in existing DPI offices which were positioned well away from the local business area. As a consequence, most centres received little use.

With the move towards electronic information formats and with electronic information now more easily accessible from a variety of locations such as schools, libraries, homes and offices, the number of physical Information Centres has been reduced by half. Most of the existing centres provide some print material but also house a computer with access to DPI's electronic information products on either CD ROM or via the Web. The Web Services initiative has helped save DPI hundreds of thousand of dollars in maintaining numerous Information Centres whilst improving the quantity, quality, storage, management and accessibility of Departmental information.

### **3. Information Supermarket conferences**

In supplying DPI officers with information over a number of years, library staff have built up an extensive knowledge of research projects in progress and services available within the organisation. As DPI is a large and complex organisation, many of our clients are unaware of the wide range of useful services available. DPI officers also need regular updates on the services provided by the Department and other related organisations in order to provide effective extension services.

To raise awareness of these services, in 1998 and 1999, DPI Library Services organised two highly successful conferences and trade displays. The conference, called the "Information Supermarket", also included details of services, systems and products provided by other government departments and commercial organisations relevant to the primary industries sector. The first conference concentrated on information services alone and attracted over 90 delegates including agribusiness representatives, librarians, consultants, academics and

extension officers. It was held during the Queensland Primary Industries Week, when many other public relations, information and education activities are held across the state to provide draw attention to the work carried out by and the value of primary industries enterprises to the state. After the first conference, a number of regional economic development organisations in Northern Queensland showed an interest in having the conference located in their region.

The theme of the second conference held in March 1999 was "Relevant information, smarter decisions, viable businesses and profitability" with an underlying globalisation theme. As it was not economically possible to take the conference to each region, the conference sessions were videoconferenced interactively to four regional centres. The conference attracted 114 participants on-site in Brisbane and approximately 30 regional participants via videoconference. The videoconferencing aspect was quite expensive and in one case the picture quality was quite poor, however the interactivity was enthusiastically received from both Brisbane and the regional areas. Apart from the content of the presentations, the wider applications of the videoconferencing technology in rural areas became evident to some delegates who had never participated in this form of communication before.

Papers presented at the conference covered topics such as the Global Marketplace, Internet applications and benefits for farmers, farm management software packages, e-commerce, electronic trading and marketing systems, weather and climate information systems, specialised information services for specific commodities such as meat, timber, seafood, export, horticulture and poultry, financial assistance packages and services, marketing co-operatives, market protocols and much more. It is interesting that the most popular session of the whole conference was the "Electronic trading and marketing" session.

In 1999, two professional television journalists chaired conference sessions. One of these journalists, a well known presenter from the Australian Broadcasting Corporation rural series "Landline" impressed by the content of her session suggested a Landline program on "electronic commerce". The Executive Director of the DPI Business Group to which Library Services belongs has suggested an expansion of the conference next year. The evaluation sheets returned an overall score of 4.3 from a maximum of 5.0 for relevance, organisation, presentation.

Two of the speakers in one session have now joined forces to set up a beta test site in North Queensland for e-commerce applications for the wool industry. Several speakers have been asked to present at other conferences around the state, whilst another Department has decided to organise its own conference as the Information Supermarket was seen as such an effective mode of communication and promotion.

Printed proceedings of the 1999 conference are now available and there is also a four part-videotape of the whole conference available for sale. Capturing the proceedings on videotape greatly extends the value of the conference. The videotapes can be distributed to remote properties and re-used with little effort at field days and in many forms of extension activities.

Some of the presentations captured on videotape were successfully re-used at the *Positive Rural Futures* conference in Goondiwindi in May 1999. This resulted in a number of enquiries for copies of the videotape and in potential sponsorship for the next conference. Segments of the videotape have also been included in other Departmental programs. Copies of the papers and Powerpoint slides will soon be available on CDROM and the conference papers will be placed on the Departmental web- site. Planning for the Information Supermarket 2000 will commence in July 1999.

The conferences were self funded from sponsorship and registrations. Although these events required extensive planning and organisation, DPI Library Services received a high level of recognition both inside and outside the Department for its contribution to DPI's core business.

### **Other library extension activities**

Apart from the three initiatives previously described, DPI Library Services also provides services and participates in other activities which assist with the dispersion and promotion of Departmental information.

Library Services staff frequently work alongside other DPI staff at local agricultural shows and local business expo's, either conducting Internet training or demonstrating DPI and other information products which can be useful to rural communities.

The *DPI Infosearch* service is one product promoted. This is a fee-based service which provides customised information services to external agencies such as local agribusiness companies, producer organisations, consultants and Research and Development Corporations.

The ability to create strong durable co-operative networks with other libraries is one of the library professions' major strengths. These networks have been developed primarily to provide our clients with better access to information. The Queensland State Library supplies a network of over 150 country libraries located in rural and remote areas of Queensland. Many of their clients are also clients of DPI. Two years ago the State Library commenced the Online Public Access Libraries (OPAL) project whereby Internet points of presence were to be progressively installed in each these libraries. Most of these libraries were also equipped with personal computers and CD-ROM drives.

DPI publishes a national CD ROM product called *Prime Notes* which includes over 2,500 technical notes on a wide range of primary industries topics and is a key source of Departmental information. DPI Library Services arranged for the free distribution of copies of *Prime Notes* to each of the Country Lending service libraries. This activity served not only to improve upon an existing good relationship with the Queensland State Library but also extended the reach of DPI information at minimal cost to rural clients who did not have access to the Internet at that time. The DPI content of *Prime Notes* is also available on the DPI web site.

## **MEASURING THE LIBRARY'S CONTRIBUTION TO RURAL ECONOMIC DEVELOPMENT**

It is difficult for a government department to measure its contribution to rural economic development. It is equally difficult for a library service to measure its contribution. A reasonable approach would be to use the same or similar performance measures as used by the parent organisation. One of the economic performance indicators for DPI is:

*Percentage of producers who are aware of and are adopting practices recommended by DPI that are designed to improve international competitiveness, long term viability and responsible resource management.*

Trend data where available, can be used to determine the rate of growth in the use of technology. In 1995 it was estimated that only 1-2% of farmers were using the Internet. A report published by the Rural Industries Research and Development Council (RIRDC) in January 1999 estimated that three years later in 1998, 20%



of farm households and 18% of all households, were using the Internet . These statistics demonstrates that farmers have been quick to realise the potential of the technology. The RIRDC report also stated that extrapolation from the figures available indicate that farmers' use of the Internet will rise to 40% by the end of 1999.

The Western Australia-based Kondinin Group which provides a range of specialised information services to its farmer members across Australia conducts annual surveys of its members' computer ownership level and Internet use. Table 1 below shows that there has been a rise from 1% to 30% in Internet connections in the three years from 1995 to 1998. The Kondinin figures may be a little higher than the national average they still illustrate the general trend and correlate with the RIRDC figures.

**Table 1. Computer ownership and Internet connections of Kondinin Group members.**

<b>Year</b>	<b>Computer ownership</b>	<b>Internet use</b>
1995	56%	1%
1996	60%	13%
1997	76%	22%
1998	N/A	30.2%

Source: Kondin Group member surveys 1995-1998

The growth in farmers' use of the use of the Internet cannot be attributed to one factor or program alone. There have been some significant Australian government and non-government programs which have encouraged the uptake of computer and Internet technology in rural areas during this period. In particular there was the National Farmers Federation, Farmwide Pty Ltd "Online services project" which began in 1996 and also the A\$53million "Networking the Nation " Regional Telecommunications Infrastructure Fund project which commenced in 1997.

The "Online Services" project was responsible for connecting 1000 farm families to online services throughout rural Australia by providing training, funding subsidies and support to families to purchase computer hardware and Internet connections. The "Networking the Nation" project provides a range of grants for projects designed to increase access to electronic information. This can range from the provision of training courses and the installation of online public access facilities, through to local telecommunications infrastructure development.

A number of recent Queensland-based initiatives such as the *Online Public Access Libraries* project (mentioned earlier) and the *Connect Ed* programs have contributed and will continue to contribute to further rapid growth, by providing Internet points of presence in rural and remote areas via country lending service libraries and schools respectively.

Other factors encouraging farmers to adopt Internet technology include; a significant increase in the volume of useful information and farm software programs available, the reduced price of computers and peripherals and increased computer storage capacity. Access to instant and relatively cheap communication via e-mail has also been a major attraction.

A major deterrent to the uptake of the Internet in rural areas is the cost of access. Telephone costs in rural areas are currently on timed or STD rates which means that the cost of the call can be prohibitive. Local calls in urban areas are untimed at a fixed rate of 25 cents per call. The growth in Internet usage may also have been much higher if the telecommunications infrastructure to support the technology was more accessible and reliable in remote areas of Australia.

## **Benefits to Farmers**

The rapid uptake of Internet technology, despite some significant telecommunications barriers in Australian rural areas is an indicator of the success of a number of federal and state government funding, training and infrastructure programs. Federal and State Governments are continuing to fund regional telecommunications development strategies and infrastructure programs. There are government promises of local call cost access to the Internet in rural areas in the next couple of years, so the future looks promising for increased rural access. However at this stage, widespread economic benefits to the individual farmers are still to be realised.

The recent Farmwide Regional Access Network (FRAN) program is a combination of the *Farmwide* and *Networking the Nation* programs mentioned earlier. This includes plans to test terrestrial and wireless solutions to improve rural telecommunications which include:

high bandwidth satellite data delivery technologies,  
an "outback modem" designed to address line quality problems,  
a trial of high bandwidth Asymmetrical Digital Subscriber Line (ADSL) technology which allows for 6MB to reach the home through the existing copper wire network,  
web content and applications development.

Ninety percent of farmers who use the Internet use it for business information gathering purposes. The most popular forms of information are market reports and pricing information, technical production, weather, information about suppliers and financial information.. More than forty percent are interested in Internet banking and 50% in interaction with government agencies. In addition, a few electronic trading applications have started to emerge such as the Australian Meat trading floor, where producers can sell their meat directly to domestic or international buyers. It is likely that the Internet will increasingly provide farmers with the possibility of disintermediation or "cutting out some of the middle men", which can lead to an increased share of the profits within their value chain

The next five years will be an interesting time. It is possible that a range of location-independent businesses will migrate to the cheaper accommodation of rural areas, thus combining businesses capable of operating on a global level with perceived improvements in personal lifestyle. There is also likely to be an increase in the number of teleworkers operating from rural areas and there is also a great deal of scope for community initiative and growth.

Over the next five years there is also likely to be exponential growth in the information content available in areas such as health, education and training which will further reduce the disadvantages of living in rural areas. When security concerns are overcome, on-line purchasing is expected to grow dramatically. The overall Internet expenditure projection for Australia in 2000 is \$4.5m total with an estimated 5% expended by farmers. Further projections estimate that 20% of all household expenditure will be via the Internet in ten years.

Another important factor which will support rural economic development in Australia is a stable social infrastructure. Internet technology has the potential to reduce rural migration to the cities by increasing communication channels and therefore reducing some social isolation factors. Email is the highest use of the Internet in rural areas. Chat rooms and Newsgroups are increasingly common as are discussion lists. Virtual global communities are starting to emerge. So the Internet is also providing for social contact as well as recreational and business pursuits.

## **INTERNAL SERVICES AND ACTIVITIES**

The previous examples describe some of the extension-type activities in which DPI Library Services has been involved and which in a number of ways have provided direct benefit to external clients. These are highly visible and tangible activities and their value to the Department is just as evident as any other DPI extension activity, although equally difficult to quantify.

In addition, and just as importantly, every library provides services which support the business and contribute to the effectiveness or profitability of the parent organisation, albeit indirectly. These services are however much less visible and even more difficult to quantify. Internal services cannot be ignored at the expense of extension activities. If a library is to remain effective, a balance must be struck between the two types of activity.

Whilst conducting its extension program, DPI Library Services has also continued to make major improvements to its internal service delivery. Key library clients include scientific research and extension officers who are continuously seeking information to explore biotechnology applications, improve crops, and to eradicate pests and diseases. Over the last few years, a range of key electronic information sources have been made available to the desktops of DPI officers. These services provide quick access to bibliographic information. An increasing number of journals are also being made available electronically in full text format which saves time in waiting for inter-library loans to arrive and enables the research worker to complete his/her work more efficiently.

The DPI Library Services intranet page provides DPI officers with easy access to databases, journals contents pages, web sites, other library catalogues, document delivery services and full-text journal articles. On-line forms are provided for interlibrary loan requests, purchasing and search requests. A firm strategy has also been put in place to widen access to information sources not only for scientists but also for economists, marketing staff, and the human resources, finance and business areas of the Department, with special emphasis on the needs of senior management.

New products and services are continuously trialled and implemented and a continuous program is conducted to assist DPI officers to develop searching skills and to maintain awareness of the tools available. User guides to many of the information sources are also provided on the intranet site. Access to information sources has also been widened significantly at little extra cost by developing local and national consortia to share access to international databases available via the web. These services provide indirect benefit to the rural community by providing DPI officers with the tools and information they need to conduct research, development and extension activities.

An extensive training program is offered to DPI officers across the state. Courses include; how to access and

use the electronic information sources available at the desktop, an introduction to the Internet and how to manage personal information using bibliographic information software packages such as *Papyrus*.

The introduction of a "learning organisation" concept within DPI in late 1998 provided a good opportunity for the library to make a direct contribution to the support of organisational learning. An intranet web site was established specifically to service the project which also includes a "virtual reading room" This resource provides access to a wide range of full text electronic information on relevant topics to DPI officers from anywhere in the state. Part of the project included the establishment of Learning Networks, so the library established a *Managing Information and Knowledge* learning network to help build synergies across relevant business units in DPI such as Information Systems, Rural information Specialists, Web Services, Publishing, Library and Information Extension Officers.

## CONCLUSION

Putting all of this in perspective the direct contribution of DPI Library Services to rural economic development in Queensland is almost as impossible to quantify as that of DPI as a whole. However examination of trends in the uptake of Internet technology confirms that the library correctly identified the potential benefits and applications of information technology to rural areas and led DPI in its very early response to these trends. It is also certain that DPI Library Services contributed to raising the awareness of rural Queenslanders, and complemented and supported the more powerful highly funded national programs. The library therefore can claim a share in the responsibility for any flow-on economic effects along with the other national and state players. The real agribusiness and on-farm economic benefits are likely to accrue over the next five to ten years when the technology matures.

## REFERENCES

Australian Bureau of Statistics, 1999, *Queensland Yearbook*, Brisbane.

Australian Bureau of Statistics, 1999, *Australian Now - a statistical profile*. Special article- The Information society and the information economy in Australia.  
<http://www.abs.gov.au/websitedbs/c31121>

Cody, K. and Gravatt, C. 1997, *Queensland's Department of Primary Industries Internet training scheme for primary producers in the west region of Queensland*. Information Online and Ondisc 97, Sydney.

Commonwealth of Australia, Department of Communication Information Technology and the Arts, 1999, *Australia's e-commerce report card*, Chapter 6. Canberra. <http://www.dcita.gov.au>

Da Rin, J. and Groves, J, 1999, *Demand and supply of Internet content for Australian farm businesses*,. Rural Industries Research and Development Corporation, RIRDC Publication No 99/2.

Gregor, S. Jones, K, Larner, T. and Newman, S. Eds. 1999., *Farming the Web*. Central Queensland University Press, Rockhampton.

Groves, J. and Da Rin, J. 1999, *Economic and social impacts of farm Internet use*. Rural Industries

Cathy Campbell, Queensland Department of Primary Industries

Research and Development Corporation, RIRDC Publication No 99/35.

James, Henry, 1996. *Farmer's guide to the Internet*. 2nd ed. Lexington, Ky.: TVA Rural Studies.

Rural Industries Research and Development Corporation, *Rural Australia Online*, Newsletter September 1998, <http://www.rirdc.gov.au/pub/newsletteres/it.htm>